

***Androdeloscia* gen. n., a new genus of South American terrestrial isopods with description of 13 new species (Crustacea: Oniscidea: "Philosciidae")**

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***Androdeloscia* gen. n., a new genus of South American terrestrial isopods with description of 13 new species (Crustacea: Oniscidea: "Philosciidae")**. - A new genus of philosciid Oniscidea is described for the Venezuelan species *Prosekia hamigera* (Vandel, 1952) and its Brazilian congener *P. silvatica* Lemos de Castro & Souza, 1986. They differ remarkably from *Prosekia rutilans* (Vandel, 1952) and are linked by several synapomorphies with other genera of small philosciids from South America, particularly with *Erophiloscia* Vandel, 1972 and *Andenoniscus* Verhoeff, 1941. Several new species of this genus have been found in the collections of Dr W. Hanagarth in Peru, which are now courtesy of the Staatliches Museum für Naturkunde, Stuttgart (SMNS) and in the collections undertaken by Dr C. Schmidt (Ruhr-Universität) in Venezuela in spring 1998. A diagnosis of the new genus is given, all the species included are described in detail, the inter- and infrageneric phylogenetic relationships are discussed. A key to the species is given.

Key-words: Isopoda - Oniscidea - South America - biogeography - phylogeny - taxonomy.

INTRODUCTION

There are some species of Oniscidea from South America, which had been described as belonging to the genus *Chaetophiloscia* Verhoeff, 1908, a genus with linea frontalis reduced and long noduli laterales (VERHOEFF 1908). the generic diagnosis was completed by SCHMALFUSS (1990). These species were separated in the genus *Prosekia* Vandel, 1968 mainly due to some biogeographic considerations; VANDEL (1968) stated, that *Chaetophiloscia* is a genus of eastern mediterranean distribution widely absent from southern Spain and Portugal. A wide gap between the two distributional areas, circum-mediterranean and northern South America would result even when continents were transformed to their position in early Cretaceous. Addi-

tionally, he gave some characters for differentiation (VANDEL 1968, p. 118): the shape of the antennula and the length of the noduli laterales. Whereas the biogeographical argument is difficult to follow, the remarkable differences in morphology justify the separation of *Prosekia* as a genus on its own. Unfortunately, the members of *Prosekia* showed up to be a polyphyletic assembly. To reduce this genus to a monophyletic taxon, a re-examination of all its members is attempted. The first results lead to the separation of *Prosekia hamigera* (Vandel, 1952) and *P. silvatica* Lemos de Castro & Souza, 1986 into a new genus *Androdeloscia* gen. n.. They differ in many characters from *P. rutilans* (Vandel, 1952) which was the first species described of those belonging to this genus (VANDEL 1952) and should be considered as type of this genus.

The examination of a collection of Oniscidea performed in spring 1998 in Venezuela by Dr C. Schmidt (Ruhr-Universität-Bochum) revealed the presence of additional three species of *Androdeloscia* gen. n. in this region; another important collection of Oniscidea was made by Dr W. Hanagarth in Peru. The material was first examined by Dr H. Schmalzfuss from the Staatliches Museum für Naturkunde, Stuttgart. He described three species of the philosciid genus *Ischioscia* Verhoeff, 1928 (SCHMALZFUSS 1980) and gave a summary of the material. The other material remains undescribed until now. In this collection, members of *Androdeloscia* gen. n. were plentiful, so that 10 new species can be distinguished.

Within this work, the systematic section is followed by a paragraph on the phylogeny and biogeography of this interesting new genus.

The following acronyms are used:

SMNS Staatliches Museum für Naturkunde, Stuttgart

USNM United States National Museum, Smithsonian Institution, Washington

MNHG Muséum d'histoire naturelle, Genève

MUMV Museo de la Universidad de Maracay, Venezuela

SYSTEMATIC SECTION

***Androdeloscia* gen. n.**

Diagnosis: Cephalothorax with linea supra-antennalis, linea frontalis in most species reduced, small lateral lobes, compound eyes consisting of about 6 ommatidia. Antennula with divergent setal tufts on distal article (fig. 64), antenna with three-articulated flagellum bearing a long apical organ.

Mandible with molar penicil composed of 3 to 6 branches, maxilla with lateral endite bearing 4+6 or 4+5 teeth, hyaline lobe rarely present, maxilla with lateral lobe twice as broad as medial lobe, maxillipedal endite with small knob-like penicil.

Pereopods slender, with small antenna-grooming brush on carpus 1, ornamental sensory spine double-fringed serrate, carpus with mediolateral setal tuft, coxal plates bearing flagelliform nodulus lateralis (fig. 64), sulcus marginalis present to rudimentary, nodulus lateralis IV more dorsally inserted than others.

Pleopods without respiratory area, exopodites rhomboid but exopodite 5, which is triangular, male exopodite 5 with straight medial margin, bearing caudally

guide slot for flagelliform endopodite 2 (fig. 64). Male exopodite 1 rounded, endopodite bearing tubercles, in some species hyaline lamellae. Genital papilla stout, with elliptic ventral shield slightly surpassed by ductus ejaculatori, apically obtuse.

Uropod with triangular protopodite laterally grooved, endopodite inserting proximally of exopodite.

Type species: *Chaetophiloscia hamigera* Vandel, 1952.

Comments: As VANDEL (1968) stated, the genus *Prosekia* is distinguished by the shape of the antennula and the complexity of the male pleopod endopodites. A thoroughly revision of the type material of *Andenoniscus silvaticus* Verhoeff, 1941 revealed the presence of this type of antennula also in this genus (LEISTIKOW 1998). Thus, it may be a character of a larger monophylum - provisionally called the *Prosekia*-group. The new genus is similar to *Andenoniscus* Verhoeff, 1941 and *Erophiloscia* Vandel, 1972 in the overall habitus, tiny species of maximal 5mm with slender pleon and rounded telson. In contrast to the above mentioned species, a linea frontalis is reduced in *Androdeloscia* gen. n.; another autapomorphy is the shape of the male pleopod 5 exopodite, which is apically drawn out to some extend. An even more complex character is a furrow parallel to the medial margin of the caudal surface, covered with pectinate scales. This furrow works as a guide slot for the flagelliform pleopod 2 endopodite, fitting so tight that it is sometimes impossible to remove the endopodite from the furrow without damaging it. A furrow of similar structure and function has been evolved several times within the Crinocheta, it can be found in *Chaetophiloscia* and *Philoscia* Latreille, 1804 as well (pers. obs.). The details of this structure and the lack in its closest relatives may warrant the autapomorphic status. A medially drawn out pleopod 5 exopodite in the male can be found in *Erophiloscia*, too (VANDEL 1972). In contrast to the new genus, there is no trace of a guide slot for the pleopod 2 endopodite. Most probably, *Erophiloscia* is the adelphotaxon of *Androdeloscia* gen. n. This will be dealt with in another contribution to these genera. Furthermore, several species of *Prosekia* described from the Amazon region (LEMO DE CASTRO & SOUZA 1986; LIMA 1997) have to be transferred to *Androdeloscia*. This is the result of a re-examination of the type material from the Museo Nacional, Rio de Janeiro.

Etymology: The genus name refers to the complex male copulatory devices of the pleopods: "andros" greek for "male", "del-" is abbreviated from greek "delos" for obvious/visible, whereas "oscia" is a suffix commonly used for Crinocheta with philosciid facies.

KEY TO THE SPECIES

- 1 Males with pereopod 7 bearing lobes on merus 10
- Males with pereopod 7 without meral differentiation 2
- 2 Fields of cuticular scales ventrally on male pereopod 4 to 6 *A. taitii* sp. n.
- No such fields on pereopods 3
- 3 Male pleopod 1 exopodite comparatively big, more or less circular
 *A. opercularis* sp. n.

- Male pleopod 1 exopodite rounded but smaller than half the length of endopodite 4
- 4 Male pleopod 1 endopodite slender, apex directed laterally, with small knobs and saddle-shaped lobe, without prominent protrusions, distal sensory spine of propus 1 with double-serrate fringe *A. dalensi* sp.n.
- Pleopod 1 endopodite of different shape, distal sensory spine of propus 1 with one to three subapical points 5
- 5 Male pleopod 1 endopodite with prominent protrusions 6
- Male pleopod 1 endopodite without protrusions, apex with small knobs, looking "fir cone-like" 8
- 6 Protrusion on endopodite directed laterally, sickle-shaped *A. hamigera*
- Male pleopod 1 endopodite with two small protrusions 7
- 7 Apex of endopodite finger-shaped, protrusions on halflength *A. poeppigi* sp. n.
- Apex stout, hammer-shaped due to distal protrusions *A. malleus* sp. n.
- 8 Male pleopod 1 endopodite stout with broad base, pleopod 5 exopodite particularly drawn out *A. conipus* sp. n.
- Male pleopod 1 endopodite with almost equally-sided triangular base 9
- 9 Male endopodite 1 distinctly bent laterally in last third *A. plicatipus* sp. n.
- Male endopodite 1 more or less straight *A. feistae* sp. n.
- 10 Merus with one lobe or protrusion 11
- Merus with more than one lobe or protrusion 14
- 11 Protrusion on merus mediodistally 13
- Protrusion on merus medially, more or less on halflength 12
- 12 Pleopod 1 endopodite apically bulbous with flagelliform tip; short inner claw of pereopods *A. ferrarai* sp. n.
- Pleopod 1 endopodite apically bulbous, obtuse, appearing spiny; inner claw almost as long as interungual seta *A. longiunguis* sp.n.
- 13 Protrusion finger-shaped, directed distally, with sensory spine apically *A. digitata* sp. n.
- Protrusion small lobe, pleopod 1 endopodite with flagelliform tip *A. merolobata* sp. n.
- 14 Male pleopod 1 endopodite with distally directed protrusion of muscular part *A. silvatica*
- Male pleopod 1 without such a protrusion *A. pseudosilvatica* sp. n.

SPECIES ACCOUNT

Androdeloscia hamigera (Vandel, 1952) comb. n.*Chaetophiloscia hamigera* Vandel, 1952*Prosekia hamigera* (Vandel): VANDEL 1968

Material: Venezuela: 2♂ (max. 3.5mm) 2♀ (ovigerous) Caripe, 10°10.51'N 63°30.21'W, garden with palms, orchids, Poaceae, ferns, under flower pots, leg. 07.04.1998 C. Schmidt, MHNG coll.: 1♂ 2♀ (ovigerous) same data, MUMV coll.: 9♂ 7♀ (ovigerous) 9♀ 6imm. same data, author's coll.: 2♂ 3♀ (ovigerous) 6♀ 2imm. Caripe, surroundings of Cueva del Guacharo, 10°35.94'N 63°11.81'W, moist forest, under rotting logs and leaf litter near

brook, leg. 07.04.1998 C. Schmidt, author's coll.; 9♂ 1♂ 11♀ 9imm, Península de Paria, Puy Puy, 10°42.00'N 62°58.05'W, bay with sandy beach, coconut palms, surrounded by dry mountains, swamp near beach, under logs and leaf litter, leg. 30.03.1998 C. Schmidt, author's coll.

Colour: Colour pattern similar to *A. dalensi* sp. n. with light spots in medial line of pereon, pleon unmarked.

Cephalothorax: Linea supra-antennalis straight, lateral lobes small, lamina frontalis present, linea frontalis lacking, compound eyes consisting of about 8 ommatidia (pl.1, Ctf).

Pereon: Tegument smooth and shiny, bearing scattered tricorn-like setae, coxal plates without gland pores, sulcus marginalis poorly individualized, noduli laterales flagelliform, on coxal plate IV more dorsally inserted (fig. 1, Cx3/Cxp).

Pleon: Set apart from pereon, neopleurae of pleonites 3 to 5 rather short, pleotelson with rounded apex, laterally straight, bearing few tricorn-like setae.

Appendages:

Antennula: Three-articulate, rather slender with distal article bearing prominent tuft of aesthetascs medially and 2 aesthetascs apically (fig. 1, An1).

Antenna: Comparatively slender, length ratio of peduncular articles 1 to 5 1: 2: 2: 4: 5, flagellum three-articulate with articles subequal in length, distal article slightly longer, apical organ half as long as flagellum (fig. 1, An2).

Mandible: Molar penicil dichotomized, composed of about seven branches, pars intermedia with two penicils on left and one on right mandible, additional plumose seta more proximally (fig. 2, Mdl/r).

Maxillula: Medial endite with two pointed penicils, apical tip medially, lateral endite with apically 3+5 teeth, four of inner set cleft, laterally fringed (fig. 2, Mx1).

Maxilla: Lateral lobe almost twice as broad as medial one, bearing pectinate scales, medial endite bearing some cusps apically (fig. 2, Mx2).

Maxilliped: Basipodite with sulcus lateralis, palp with one seta on proximal article, two setal tufts on distal articles, endite with two teeth caudally, knob-like penicil smooth (pl.2, Mxp).

Pereopods: Rather slender, especially pereopod 1, carpus with antenna-grooming brush and serrate ornamental sensory spine (fig. 3, Sc1), dactylus with short inner claw and simple dactylar seta (fig. 3, Dac).

Sexual differentiation: Pereopods 2 to 4 with fields of proximally directed cuticular setae medially on carpus and merus (fig. 3, PE4).

Pleopods: Similar to other members of the genus (fig. 3, PL1-5).

Sexual differentiation: Male pleopod exopodite circular, endopodite with falciform protrusion laterally on half length, apex obtuse, with hyaline lamellae and hyaline lobe, caudal row of sensory spine only on distal third of pleopod. Pleopod 2 similar to next species, pleopod 5 exopodite with medial slot guide, distally protruding.

Uropod and genital papilla: As in generic diagnosis.

Comments: As in most of the species of *Androdeloscia* gen. n., the species *A. hamigera* (Vandel, 1952) is best distinguished by the shape of the male pleopod

1 endopodite. The lateral sickle-shaped protrusion is found in no other species, thus being the best character to separate the species. First described as belonging to the genus *Chaetophiloscia* Verhoeff, 1908, the species was grouped with some other South American species of *Chaetophiloscia* in a new genus *Prosekia* Vandel, 1968 mainly for biogeographic reasons (VANDEL 1968). Since it differs remarkably from *Prosekia rutilans* (Vandel, 1952) it is now part of the monophyletic group *Androdeloscia* from tropical South America. *Prosekia rutilans* has big compound eyes, a faint linea frontalis and structurally different male pleopods. E. g., pleopod 2 endopodite is short with a club-like apex, while in all members of *Androdeloscia* the endopodite is slender with a more or less flagelliform apex. A discussion of the characters of *P. rutilans* will be given elsewhere.

***Androdeloscia conipus* sp. n.**

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyapichis, Biological station "Panguana" 9°37'S 74°56'W, altitude 250m: HOLOTYPE ♂ 4mm "A2", 1.XII.1975 leg. W. Hanagarth, SMNS coll. T446; PARATYPES 4♂ 5♀, same data as holotype, SMNS coll. T447.

Colour: Dorsally brown with several white markings on the tergites, medially forming a white band which is accompanied by two paramedian rows of prominent white spots on pereonites 1 to 4, pleon with some light spots, cephalothorax dorsally densely marked white.

Cephalothorax: No linea and lamina frontalis, linea supra-antennalis and small lateral lobes present, profrons between compound eyes slightly bulbous (fig. 4, Ctf).

Pereon: Smooth and shiny tegument, coxal plates with sulcus marginalis along lateral border, no gland pores, insertion of nodulus lateralis bordered by concentric structure of the cuticle, noduli long and flagelliform, maximum of d/c-coordinates on coxal plate IV (fig. 4, Cx4/Cxp).

Pleon: Retracted from pereon, neopleurae of pleonites 3 to 5 conspicuous, pleotelson with straight margins, bearing some prominent tricorn-like setae.

Appendages:

Antennula: Three-articulate, medial tuft consisting of about 10 aesthetascs (fig. 4, An1).

Antenna: Rather stout, length ratio of peduncular articles 1 to 5 1: 2: 2: 3: 4, flagellum three-articulate, joints subequal in length, apical organ longer than distal article (fig. 4, An2).

Mandible: Pars molaris consisting of a four-branched molar penicil, pars intermedia bearing two penicils on left and one on right mandible, intermedial penicil slender (fig. 5, Mdl/r).

Maxillula: Medial endite bearing two slender penicils and apical tip, lateral article with 4+5 teeth, four of inner set cleft (fig. 5, Mx1).

Maxilla: Lateral lobe two times broader than medial one, fine hair-like setae arranged in parallel lines, medial lobe with 7 cusps apically (fig. 5, Mx2).

Maxilliped: Basipodite with sulcus lateralis, palp with proximal article bearing one seta, endite with knob-like penicil rostrally and tooth caudally (fig. 5, Mxp).

Pereopods: Slender, dactylus with short inner claw and simple dactylar seta, carpus of pereopod 1 with antenna-grooming brush reaching far laterally, ornamental sensory spine with one serrate fringe reaching more proximally than other (fig. 6, Sc1).

Sexual differentiation: No apparent sexual differentiation (fig. 6, PE1-7).

Pleopods: Exopodites of pleopod 3 and 4 prominent, bearing laterally 4 sensory spines, no respiratory areas discernible, endopodites bilobate (fig. 7, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite almost circular, endopodite stout and coniform, apically pointed, with some distinct dentations laterally and caudally, caudal row of small spines reduced to area near apex (fig. 7, PL1). Pleopod 2 exopodite triangular with two lateral sensory spines, endopodite with long, flagelliform apex (fig. 7, PL2), pleopod 5 exopodite with guide slot for pleopod 2 endopodite, apically extensively drawn out (fig. 7, PL5).

Uropod: Similar to generic diagnosis.

Genital papilla: As in generic diagnosis.

Comments: This species belongs to a group which is characterized by the reduction of the hyaline lamellae on the male pleopod endopodite, which is typical for most of the members of the *Prosekia*-group. Together with the following two species, *A. feistae* sp.n. and *A. plicatipus* sp. n., is united by the apomorphic structure of the male pleopod 1 endopodite, which is pointed and bears a variety of small bosses and knobs. As in the other species of this group, the pereopods of the males are unmodified, but males can be at once separated from other species of *Androdeloscia* gen. n. by the stout pleopod 1 endopodite.

Etymology: The species name is derived from latin "*conus*" and "*pus*", meaning cone and foot, referring to the coniform endopodite of pleopod 1.

***Androdeloscia feistae* sp. n.**

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyapichis, Biological station "Panguana" 9°37'S 74°56'W, altitude 250m: HOLOTYPE ♂ 3mm, forest, IV-V.1975 leg. W. Hanagarth, SMNS coll. T478; PARATYPES 1♂ 10♀ 4 juveniles max. 4mm, same data as holotype, SMNS coll. T448; 1♂ 3mm, matorral at river side, clay soil, leg. W. Hanagarth, SMNS coll. T449; 3♂ 4 juveniles, max 3mm, matorral at river side, 4.-27.XII. 1975 leg. W. Hanagarth, SMNS coll. T450; 2♂ 12♀ max. 3.5mm, forest, II.-III.1975, leg. W. Hanagarth, SMNS coll. T451.

Colour: Most specimens were faded to yellowish brown, some light spottings on the dorsum.

Cephalothorax: Linea frontalis missing, linea supra-antennalis prominent, only slightly bent between antennal sockets, small lateral lobes, compound eyes consisting of about 7 ommatidia (fig. 8, Ctf).

Pereon: Tegument smooth and shiny, with scattered tricorn-like setae, sulcus marginalis reduced, noduli laterales flagelliform, more dorsally on coxal plate IV (fig. 8, Cx3/Cxp).

Pleon: Set apart from pereon, neopleurae of pleonites 3 to 5 adressed, pleotelson with rounded lateral margins, bearing scattered tricorn-like setae.

Appendages:

Antennula: Distal article apically with small tip and two aesthetascs, medially with tuft of about 10 aesthetascs, medial article slightly shorter than proximal one (fig. 8, An1).

Antenna: Peduncle rather stout, article 4 only slightly longer than article 3, flagellum with distal article half as long as all three joints together, apical organ of two thirds the length of flagellum (fig. 8, An2).

Mandible: Pars intermedia with two penicils left and one right, molar penicil consisting of about 4 branches, additional penicil distally (fig. 9, Mdl/r).

Maxillula: Medial endite with two penicils and small tip apically, lateral endite with 4+6 teeth apically, inner set consisting of 5 cleft and one vestigial tooth, small spine subapically, cuticular lobe sublaterally, both on rostral surface (fig. 9, Mx1).

Maxilla: Lateral lobe more than twice as broad than medial lobe, bearing scattered pectinate setae, medial lobe with 9 cusps apically (fig. 9, Mx2).

Maxilliped: Basipodite with short sulcus lateralis, endite bearing two teeth caudally, small knob-like penicil rostrally, palp with single seta on proximal article, medial and distal article with setal tufts (fig. 9, Mxp).

Pereopods: Slender with short setal tufts on carpus laterodistally, antenna-grooming brush of carpus 1 very small, tricorn-like setae slender, ornamental sensory spine serrate (fig. 10, Sc1), dactylus with short inner claw, dactylar seta simple (fig. 10, Dac).

Sexual differentiation: Apparently no prominent sexual differentiation, male ischium 6 and 7 with only one sensory spine laterally (fig. 10, PE1-7).

Pleopods: Exopodites of pleopods 2 to 4 rhomboid, of pleopod 5 almost triangular, laterally with about 1 to 3 sensory spines, no respiratory areas discernible in light microscope, endopodites bilobate (Fig. 10, PLx; fig. 11, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite rounded, endopodite straight, muscular basal part short, apex acute, slightly twisted, i. e. caudal row of spines running on rostral side, some cuticular hooks directed proximally, hyaline serrate lobe fairly motile (fig. 11, PL1). Pleopod 2 as in other species of this genus (pl.11, PL2), exopodite of pleopod 5 with sulcus medially for pleopod 2 endopodite, distally only pointed (fig. 11, PL5).

Uropod: As in other species of genus (fig. 10, UR).

Genital papilla: Similar to generic diagnosis.

Comments: *Androdeloscia feistae* sp. n. together with *A. plicatipes* sp. n. are the sister species of the preceding species, they share as an apomorphy the shape of the male pleopod 1 endopodite which is rather slender with a basal part of triangular shape containing the muscle M49 (cf. ERHARD 1997). Different to its sister species, the endopodite is straight and not laterally bent. Further apomorphies are the reduction of sensory spines on ischium 6 to one in contrast to two.

Etymology: This species is named for Mrs R. Feist, University of Bielefeld in honour for her help in SEM preparations and photography.

Androdeloscia plicatipus sp. n.

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyapichis, Biological station "Panguana" 9°37'S 74°56'W, altitude 250m: HOLOTYPE ♂ 3mm, field with maniok 12.-27.XII.1975 leg. W. Hanagarth, SMNS coll. T479; PARATYPES 2♂ 9♀ 2 juveniles max. 3.5mm, same data as holotype, SMNS coll. 452; 5♂ 1♀, max. 2.5mm, matorral at river side, 4.-27.XII.1975, leg. W. Hanagarth, SMNS coll. T453; 3♂ 18♀ 2 juveniles, max. 3.5mm, area with kudzu tropical, III.-V.1975, leg. W. Hanagarth, SMNS coll. T454; 6♂ 55♀ 2 juveniles, max.3.5mm, forest, XII.75-I.1976, leg. W. Hanagarth, SMNS coll. T455; 1♂ 2♀ same data, USNM coll.

Colour: Reddish brown, slightly faded, dorsum with light patches at least on coxal plates, cephalothorax heavily spotted yellowish.

Cephalothorax: Linea frontalis absent, area slightly bulbous, linea supra-antennalis prominent, almost straight between antennal sockets, small lateral lobes present, compound exes consisting of about 6 ommatidia (fig. 12, Ctf).

Pereon: Tegument shiny, dorsum bearing scattered tricorn-like setae, coxal plates with reduced sulcus marginalis and flagelliform noduli laterales, insertion area with small concentric grooves, more dorsally on coxal plate IV (fig. 12, Cx4/Cxp).

Pleon: Retracted from pleon, neopleurae of pleonites 3 to 5 conspicuous, telson with straight margins, bearing few slender tricorn-like setae.

Appendages:

Antennula: Three-articulate, medial article shortest, distal article apically with small tip and two aesthetascs, medially with about 10 aesthetascs (fig. 12, An1).

Antenna: Peduncle rather stout, article 5 only slightly longer than flagellum and peduncular article 4, three-articulate flagellum with long apical organ, half as long as flagellum (fig. 12, An2).

Mandible: Molar penicil consisting of 4 branches, left pars intermedia with two penicils and several coniform setae, right bearing few setae and one penicil (fig. 13, Mdl/r).

Maxillula: Medial endite with two penicils apically, lateral endite with stepped setal fringe laterally, apically with 4+6 teeth, five of inner set cleft, innermost simple tooth vestigial (fig. 13, Mx1).

Maxilla: Lateral lobe two times broader than medial, bearing several trichiform setae and pectinate scales, apically about 8 clusps (fig. 13, Mx2).

Maxilliped: Basipodite with short sulcus lateralis, endite with two teeth caudally and knob-like penicil rostrally, palp with two unequal setae on proximal article, medial and distal article each bearing setal tuft, lateral setae rather stout (fig. 13, Mxp).

Pereopods: Pereopods rather slender, with setal tuft laterodistally on carpus, carpus I with antenna-grooming brush, ornamental sensory spine serrate (fig. 14, Sc1), dactylus with short inner claw and simple dactylar seta, interungual seta curved (fig. 14, Dac). Medial sensory spines of merus 6 closer together than in preceding species (fig. 14, Sm6).

Sexual differentiation: Only slight differentiation, male pereopod 7 ischium medially lacking sensory spines (fig. 14, PE1-7).

Pleopods: Similar to the preceding species, medial protrusion of pleopod 3 protopodite rather long (fig. 15, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite rounded, endopodite with short basal part containing muscle M49, distal part slender, one third before apex strongly grooved and bent laterally, twisted, short row of spines, apex with several decurved cuticular hooks (fig. 15, PL1). Pleopod 2 exopodite pyriform, without sensory spines, endopodite slender, not as flagelliform as in preceding species (fig. 15, PL2), pleopod 5 exopodite with guide slot for endopodite 2, apically only slightly drawn out (fig. 15, PL5).

Uropod: Similar to other species.

Genital papilla: As in other members of genus.

Comments: This species is close to the preceding, *A. feistae* sp. n. from which it is immediately distinguished by the shape of male pleopod 1 endopodite as described above. Therefore, its structure is more complex in comparison to the other two species of the "cone pleopod"-group which also includes *A. conipus* sp. n. A synapomophy of *A. plicatipus* sp. n. and *A. feistae* sp. n. is that there is only one medial sensory spine on the male ischium 7 instead of two as in other species.

Etyymology: The species name is derived from latin "*plicatus*" meaning "folded" and "*pus*" for "foot" due to the shape of pleopod 1 endopodite.

***Androdeloscia taitii* sp. n.**

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyapichis, Biological station "Panguana" 9°7'S 74°6'W, altitude 250m: HOLOTYPE ♂ 4mm, matorral at iver side, sandy soil, 20.VII.1975 leg. W. Hanagarth, SMNS coll. T456; PARATYPES 3♂ 3♀ 1 juvenile, max. 4mm, same data as holotype, SMNS coll. T457; 1♂ 4.5mm, secondary forest of 10 years in flood area, 23.IV.1975. leg. W. Hanagarth, SMNS coll. T458.

Colour: Dorsum faded to reddish brown, few light spots visible, cephalothorax heavily spotted, pleon uniformly coloured.

Cephalothorax: Linea supra-antennalis strongly decurved between antennal sockets, small lateral lobes, linea frontalis lacking, compound eyes consiting of about 7 ommatidia (fig. 16, Ctf).

Pereon: Pereonites with few tricorn-like setae, tegument smooth, coxal plates with proximally reduced sulcus marginalis, noduli laterales long, flagelliform, insertion on coxal plate IV considerably dorsal (fig. 16, Cx3/Cxp).

Pleon: Retracted from pereon, rather short, with small neopleurae on pleonites 3 to 5, pleotelson with straight lateral margins.

Appendages:

Antennula: Three-articulate, proximal article rather slender, distal article with two aesthetascs apically, broken in dissected antennule, medial set of about 10 aesthetascs (fig. 16, An1).

Antenna: More slender than in preceding species, especially flagellum, medial article shortest, apical organ as long as distal article (fig. 16, An2).

Mandible: Pars intermedia only sparsely setose, molar penicil composed of 4 rather short branches, right lacina mobilis deeply sinuous apically (fig. 17, Mdl/r).

Maxillula: Medial endite with small tip and two penicils apically, medial endite with hyaline cuticular lobe and 4+6 teeth, four of innermost set cleft (fig. 17, Mx1).

Maxilla: Lateral lobe two times broader than medial one, bearing trichiform setae, medial lobe bearing stronger setae, apically with about six cusps (fig. 17, Mx2).

Maxilliped: Basipodite with sulcus lateralis almost reduced, palp with two setae on proximal article, setal tufts on distal articles, innermost consisting of 3 setae, endite bearing knob-like penicil rostrally and two teeth caudally (fig. 17, Mxp).

Pereopods: Rather slender, especially pereopod 1, carpus with antenna-grooming brush and apically serrate ornamental sensory spine, carpus of pereopods 3 and 4 with hyaline cuticular fringe mediodistally (fig. 18, PE3/4), laterodistal tufts small, dactylus with simple dactylar seta and short inner claw (fig. 18, Dac).

Sexual differentiation: Male merus of pereopod 2 and 3 with quadrangular, of pereopod 4 to 6 with acute, proximally directed cuticular scales medially (fig. 18 PE1-4; fig. 19, PE 6-7).

Pleopods: Exopodites of pleopod 3 and 4 rhomboid, laterally with 3 to 4 sensory spines, exopodite 5 more triangular, lacking respiratory areas, endopodites bilobate (fig. 20, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite pointed, shape characteristic: almost straight from lateral insertion on protopodite to apex, medially much more rounded at the base, endopodite with short basal area containing muscle M49, distally straight up to the bulbous apex, bearing two horns, medially with groove, and twisted, row of spines beginning caudally, ending more apically on rostral side, lateral area of bulb rostrally with hyaline lamellae, caudally granulate (fig. 20; PL1). Pleopod 2 exopodite similar to exopodite 1, even more drawn out medioproximally, no sensory spines, endopodite slender, less tapered than *A. feistae* sp. n. (fig. 20, PL2), exopodite 5 triangular with lateral furrow, pointed (fig. 20, PL5).

Uropod and genital papilla: As in generic diagnosis.

Comments: This and the following four species form a monophyletic group within *Androdeloscia* gen. n. characterized by the shape of the pleopod 1 exopodite in the male which appears to be inverted, i.e. the lateral margin turned medially. A synapomorphy of *A. taitii* sp. n., *A. merolobata* sp. n. and *A. longimuguis* sp. n. is the distorted pleopod 1 endopodite in the male: the spermatic channel is turning from the caudal to the rostral side, thus, the caudal row of spines is ending on the rostral side. Beside the shape of the male pleopod 1 endopodite, *A. taitii* sp. n. is at once distinguished by the lack of lobes on the merus 7, it only shows areas of cuticular scales on most of the pereopods.

Etymology: The species is dedicated to Dr S. Taiti, Florence, one of the leading specialists of Oniscidea.

***Androdeloscia merolobata* sp. n.**

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyapichis, Biological station "Panguana" 9°37'S 74°56'W, altitude 250m: HOLOTYPE ♂ 5mm, forest, X.-XI.1975 leg. W. Hanagarth, SMNS coll. T459; PARATYPES 2♂ 10♀ 1 juvenile, max. 5.5mm, same data as holotype, SMNS coll. T460; 5♂ several ♀ and juveniles, max. 5mm, cattle meadow with kudzu, 1975-1976 leg. W. Hanagarth, SMNS coll. T461; 3♂ J4♀ 1 juvenile, max.5.5mm, forest, VI.-VII.1975 leg. W. Hanagarth, SMNS coll. T462; 9♂ 9♀ 1 juv., max. 5.5mm, forest,

XI.1975-I.1976 leg. W. Hanagarth, SMNS coll. T463; 1♂ 2♀ same data, USNM coll.; 3♂ 2♀ max. 5.5mm, area with kudzu tropical, 12.VI.1975 leg. W. Hanagarth, SMNS coll. T464; 3♂ 2♀ max. 5.5mm, area with kudzu tropical, 27.IV.1975 leg. W. Hanagarth, SMNS coll. T465; 3♂ max. 4.5mm, forest, II.1975 leg. W. Hanagarth, SMNS coll. T466.

Colour: Dorsally reddish brown with yellowish spottings, medial line dark brown, on pereonites 5 to 7 bifurcated, pleonites uniformly reddish brown, cephalothorax with light spotting.

Cephalothorax: Linea supra-antennalis straight, lateral lobes small, linea frontalis lacking, compound eyes consisting of about 7 ommatidia (pl.21, Ctf).

Pereon: Tegument smooth and shiny, bearing scattered tricorn-like setae, coxal plates without gland pores, sulcus marginalis poorly individualized, noduli laterales flagelliform, on coxal plate IV more dorsally inserted (pl.21, Cx3/Cxp).

Pleon: Set apart from pereon, neopleurae of pleonites 3 to 5 rather short, pleotelson with rounded apex, laterally straight, bearing few tricorn-like setae.

Appendages:

Antennula: As in preceding species (pl.21, An1).

Antenna: Fairly slender, peduncular article 2 stout, flagellum three-articulate, joints subequal in length, apical organ half as long as flagellum (pl.21, An2).

Mandible: Pars intermedia with two penicils on left, one on right side, some coniform setae, molar penicil consisting of four branches, additional penicil slender (fig. 22, Mdl/r).

Maxillula: Medial endite with two penicils and lateral tip apically, lateral endite with fringe of stepped setae, more distally stouter and individualized, apical teeth 4+6, four of innermost cleft, simple teeth short, subapical vestigial tooth on rostral surface (fig. 22, Mx1).

Maxilla: Lateral lobe twice as broad as medial one, covered with rows of trichiform setae, medial lobe apically cuspidate, bearing trichiae (fig. 22, Mx2).

Maxilliped: Basipodite with conspicuous sulcus lateralis, endite apically setose, with two teeth on caudal. small knob-like penicil on rostral surface, proximal article of palp bearing two setae, distal lobes with setal tufts (fig. 22, Mxp).

Pereopods: Pereopods slender, small setal tuft laterodistally on carpus, carpus 1 with small antenna-grooming brush and apically serrate ornamental sensory spine (fig. 23, Sc1), dactylus with short inner claw and simple dactylar organ (fig. 23, Dac).

Sexual differentiation: Male pereopod 2 to 3 merus with quadrangular cuticular scales, merus 4 to 6 with acute cuticular scales, pereopod 7 merus with semicircular lobe mediodistally on caudal side, bearing cuticular scales, covering a third of length of merus (fig. 23, PE1-4; pl.24, PE5-7).

Pleopods: Pleopod exopodites 3 to 4 rhomboid with 3 to 4 sensory spines laterally, without respiratory area, endopodites bilobate, pleopod 5 more pointed (pl.25, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite similar to *A. taiii* sp. n., endopodite at its base slightly smaller than protopodite, basis containing M49 triangular, distal part twisted, row of spines turned to rostral side, apex bulbous with transverse groove on caudal side, sides of spermatic furrow serrate, rostral side with

some cuticular granules and hyaline lamellae, bulb terminated by laterally directed flagellar extension (fig. 25, PL1). Pleopod 2 exopodite with broad rounded apex, bearing 3 sensory spines laterally, endopodite slender, distal half flagelliform (fig. 25, PL2), pleopod 5 exopodite triangular with slightly drawn out apex, caudally with medial guide slot for endopodite 2 (fig. 25, PL5).

Uropod and genital papilla: As in other members of genus (fig. 24, UR).

Comments: As the species name infers, *A. merolobata* sp. n. bears a medio-distal lobe on merus 7 in the male. This and the complex shape of the male pleopod 1 endopodite are autapomorphies of this species which forms the adelphotaxon of *A. longiunguis* sp. n., the apomorphy is the shape of pleopod 2 exopodite with two sensory spines laterally. It is united with *A. taitii* and its sister species by the distortion of the male pleopod 1 endopodite. *A. merolobata* sp. n. was the by far commonest of all its congeners in the Panagua area, it was collected at many sites in big numbers. It occurred in both forest and open areas as cleared places for agriculture.

Etymology: The species name refers to the lobe on the male pereopod 7 merus.

***Androdeloscia longiunguis* sp. n.**

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyapichis, Biological station "Panguana" 9°37'S 74°56'W, altitude 250m: HOLOTYPE ♂ 4mm, area with kudzu tropical 5.IX.1975 leg. W. Hanagarth, SMNS coll. T467.

Colour: The only male of this species rather faded, so that spotting invisible, dark median line dorsally.

Cephalothorax: Linea frontalis lacking, linea supra-antennalis present, small lateral lobes and slight lamina frontalis, compound eyes consisting of about 8 ommatidia (fig. 26, Ctf).

Pereon: Pereonites covered with small tricorn-like setae, tegument smooth, coxal plates without sulcus marginalis and gland pores, noduli laterales long, flagelliform, nodulus of coxal plate IV the most dorsal one (fig. 26, Cx3/Cxp).

Pleon: Set apart from pereon, neopleurae of pleonites 3 to 5 small but clearly visible, pleotelson with rounded lateral margin, bearing several tricorn-like setae.

Appendages:

Antennula: Similar to other species of the genus, apical tuft with 3 aesthetascs (fig. 26, An1).

Antenna: Rather stout, length ratio of peduncular articles 1 to 5 is 1: 2: 2: 3: 4, flagellum three-articulate, distal article longest, apical organ slightly longer (fig. 26, An2).

Mandible: Molar penicil consisting of 3 branches, pars intermedia with 2 penicils and coniform setae on left, one penicil and few setae right, additional seta long (fig. 27, Mdl/r).

Maxillula: Medial endite with small tip and 2 penicils apically, lateral endite with lateral fringe similar to *A. merolobata* sp. n., tooth formula 4+6, with four teeth of inner set cleft, innermost simple tooth short, hyaline cuticular lobe present, rostrally with subapical vestigial tooth (fig. 27, Mx1).

Maxilla: Lateral lobe more than two times broader than medial, heavily covered with trichiform setae, medial lobe bearing about 6 cusps (fig. 27, Mx2).

Maxilliped: Basipodite with sulcus lateralis, palp with two setae on proximal article, two setal tufts on distal articles, endite with two teeth caudally, knob-like penicil rostrally (fig. 27, Mxp).

Pereopods: Rather slender, especially pereopod 1, carpus with antenna-grooming brush and serrate ornamental sensory spine (fig. 28, Sc1), dactylus with long inner claw and simple dactylar seta (fig. 28, Dac).

Sexual differentiation: Male pereopod 2 to 4 with cuticular scales on merus, or cuticular plaques in pereopod 5 and 6, merus 7 with sinuous lobe bearing sensory spine proximally of halflength (fig. 28, PE1-7).

Pleopods: As in the preceding species (fig. 29, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite similar to *A. merolobata*, endopodite structurally similar, twisted with row of small spines rostrally, two caudal grooves vertically, apex less bulbous, rather square, long cuticular spines directed medially, hyaline lamellae on rostral surface (fig. 29, PL1). Pleopod 2 and 5 similar to preceding species (fig. 29, PL2/5).

Uropod and genital papilla: As in generic diagnosis (fig. 26, UR).

Comments: The name-giving long inner claw, the location of the meral lobe and the shape of the male pleopod 1 endopodite are the autapomorphies of this species. *A. longiunguis* sp. n. is linked with the preceding species by the shape and setation of the male pleopod 2 exopodite.

Etymology: The species name is derived from latin for stressing the long inner claw of the dactylus.

***Androdeloscia ferrarai* sp.n.**

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyapichis, Biological station "Panguana" 9°37'S 74°56'W, altitude 250m: HOLOTYPE ♂ 5mm. "VT 57a RC22-21", 15.V.1976 leg. W. Hanagarth, SMNS coll. T496; PARATYPES 3♂ 6♀ 5 juveniles, max. 5.5mm, same data as holotype, SMNS coll. T470; 6♂ 38♀ 6 juveniles, max. 3mm, field with annual maniok, 12.-27.XII.1975 leg. W. Hanagarth, SMNS coll. T471; 1♂ 2♀ same data, USNM coll.

Colour: Reddish to purplish brown, pereon with pale dorsal spotting, light patches on coxal plates, pleon uniformly coloured.

Cephalothorax: No linea frontalis, linea supra-antennalis present, small lateral lobes and slight lamina frontalis, compound eyes consisting of about 10 ommatidia (fig. 30, Ctf).

Pereon: Smooth and shiny tegument, coxal plates with sulcus marginalis, no gland pores, noduli laterales long and flagelliform, most dorsally on coxal plate IV (fig. 30, Cx3/Cxp).

Pleon: Retracted from pereon, neopleurae of pleonites 3 to 5 conspicuous, pleotelson with straight margins, bearing several prominent tricorn-like setae.

Appendages:

Antennula: Three-articulate, rather slender with distal article bearing prominent tuft of aesthetascs medially and 2 aesthetascs apically (fig. 30, An1).

Antenna: Comparatively slender, length ratio of peduncular articles 1 to 5 1: 2: 2: 4: 5, flagellum three-articulate with articles subequal in length, distal article slightly longer, apical organ even longer (fig. 30, An2).

Mandible: Molar penicil consisting of 4 branches, left pars intermedia with two penicils and several coniform setae, right bearing few setae and one penicil (pl.31, Mdl/r).

Maxillula: Medial endite with small tip and two penicils apically, medial endite with hyaline cuticular lobe slender, 4+5 teeth, four of innermost set cleft (fig. 31, Mx1).

Maxilla: Lateral lobe slightly broader than medial, almost without setation, medial lobe setose with about 10 apical cusps (fig. 31, Mx2).

Maxilliped: Basipodite with conspicuous sulcus lateralis, endite apically setose, with two teeth on caudal surface, small knob-like penicil lacking, proximal article of palp bearing two setae, distal lobes with setal tufts, proximal one consisting of two setae (fig. 31, Mxp).

Pereopods: Pereopods rather slender, with setal tuft laterodistally on carpus, carpus 1 with antenna-grooming brush, ornamental sensory spine serrate (fig. 32, Sc1), dactylus with short inner claw and simple dactylar seta, interungual seta curved (fig. 32, Dac), merus 3 to 4 with hyaline cuticular fringe (fig. 32, PE3/4).

Sexual differentiation: Male pereopod merus 5 with hyaline cuticular fringe, merus 6 with cuticular scales medially, pereopod 7 merus with small setose hump distally at half-length (pl.33, PE5-7).

Pleopods: Similar to preceding species, endopodites with straight to concave distal margin (fig. 34, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite as in preceding species, endopodite with rather broad basal part containing M49, of half-length of endopodite, apical part bulbous, terminally drawn out, laterally with bulbous lobes, each separated by groove, distally some cuticular hooks, medially some granules, caudally with subapical row of spines, apically some hyaline lamellae (fig. 34, PL1). Pleopod 2 endopodite with two lateral sensory spines, endopodite with flagelliform distal part (fig. 34, PL2), pleopod 5 exopodite with medial guide slot caudally, slightly pointed (fig. 34, PL5).

Uropod: Protopodite only slightly grooved between insertion of endo- and exopodite.

Genital papilla: Margins of ventral shield almost parallel, slightly surpassed by ductus ejaculatorii (fig. 34, Gen).

Comments: The male pleopod 1 endopodite may be referred to as somehow near to the ground plan of the "inverted exopodite"-group. The presence of a lamina frontalis is somewhat surprising and must be interpreted as a silent gene expression. The maxilliped endite lacks the penicil on the rostral surface, this reductive character is an autapomorphy of this species. As in the preceding species, the shape of both male merus 7 and pleopod 1 endopodite at once distinguish *A. ferrarai* sp. n. from its congeners.

Etymology: This species is dedicated to Dr F. Ferrara, Florence, one of the leading scientists of Oniscidea systematics.

***Androdeloscia poeppigi* sp. n.**

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyupichis, Biological station "Panguana" 9°37'S 74°56'W, altitude 250m: HOLOTYPE ♂ 2.5mm, "A3.4", 16.XI.1975, leg. W. Hanagarth, SMNS coll. 472; PARATYPES 2♂ 4♀ 1 juvenile, max.3.5mm, same data as holotype, SMNS coll. T473.

Colour: Yellowish brown, rather faded due to alcohol preservation, thus spotting badly discriminable.

Cephalothorax: Linea frontalis absent, area slightly bulbous, linea supra-antennalis prominent, almost straight between antennal sockets, small lateral lobes present, compound exes consisting of about 7 ommatidia (fig. 35, Ctf).

Pereon: Tegument smooth and shiny, coxal plates with sulcus marginalis rostrally, long flagelliform nodulus lateralis, nodulus lateralis of coxal plate IV inserting more medially than others (fig. 35, Cx2/Cxp).

Pleon: Set apart from pereon, neopleurae of pleonites 3 to 5 adpressed, pleotelson with straight lateral margins, bearing few scattered tricorn-like setae.

Appendages:

Antennula: Three-articulate, proximal article rather slender, distal article with two aesthetascs apically, broken in dissected antennule, medial set of about 10 aesthetascs (fig. 35, An1).

Antenna: Peduncle rather stout, article 4 only slightly longer than article 3, flagellum with distal article half as long as all three joints together, apical organ of two thirds the length of flagellum (fig. 35, An2).

Mandible: Molar penicil consisting of 4 branches, left pars intermedia with two slender penicils and several coniform setae, right bearing few setae and one penicil, additional penicil present (fig. 36, Mdl/r).

Maxillula: Medial endite with two penicils and lateral tip apically, lateral endite with fringe of stepped setae, more distally stouter and individualized, apical teeth 4+5, four of inner set cleft, second lateral tooth rather short, decurved (fig. 36, Mx1).

Maxilla: Lateral lobe more than two times broader than medial, heavily covered with pectinate scales, medial lobe bearing about 7 cusps (fig. 36, Mx2).

Maxilliped: Basipodite with sulcus lateralis, endite caudally with two teeth, rostrally bearing knob-like penicil, palp with one seta on proximal article, medial article with proximal tuft of 2 short setae, distal tuft of 2 setae (fig. 36, Mxp).

Pereopods: Slender with short setal tufts on carpus laterodistally, antenna-grooming brush of carpus 1 dense, lateroproximally with 2 tricorn-like setae, ornamental sensory spine serrate (fig. 37, Sc1), dactylus with short inner claw, dactylar seta simple (fig. 37, Dac).

Sexual differentiation: Apparently no sexual dimorphism (fig. 37 PE1-7).

Pleopods: Exopodites of pleopods 3 to 4 rhomboid, of pleopod 5 almost triangular, laterally with about 2 to 4 sensory spines, no respiratory areas discernible in light microscope, endopodites bilobate (fig. 38, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite rounded with inconspicuous point, basal part of endopodite containing M49 slightly individualized, distal part pointed, no caudal row of spines, apex obtuse, two protrusions on lateral and medio-rostral side at about half length, the latter better discernible when endopodite separated from protopodite (fig. 38, PL1). Pleopod 2 exopodite triangular, bearing one lateral sensory spine subapically, endopodite more than twice as long as exopodite, not as flagelliform as in preceding species (fig. 38, PL2). Pleopod 5 exopodite with medial guide slot and drawn out apex (fig. 38, PL5).

Uropod: Similar to other species of the genus (fig. 35, UR).

Genital papilla: Rather stout, ventral shield slightly ovoid (fig. 38, Gen).

Comments: Together with *A. malleus* sp. n., *A. poeppigi* sp. n. forms the adelphotaxon of the "fir-cone"-species group, the small finger-shaped humps on the male endopodite of pleopod 1 and the reduction of the caudal row of spines are their synapomorphies. Different to *A. malleus* sp. n., this species has a narrow male pleopod 1 endopodite with the humps arranged more proximally in contrast to the former.

Etymology: This species is named after E. F. Poeppig, one of the first explorers of the Amazon basin.

***Androdeloscia malleus* sp. n.**

Material: Peru, Dept. Huanuco; Distr. Puerto Inca, Rio Yuyapichis, Biological station "Panguana" 9°37'S 74°56'W, altitude 250m: HOLOTYPE ♂ 3mm, "A2" 1.XII.1975, leg. W. Hanagarth, SMNS coll. T474; PARATYPES 3♂ 3♀ max. 3.5mm, same data as holotype, SMNS coll. 475, 3♂ 28♀, max. 3.5mm, forest, VIII.-IX.1975, leg. W. Hanagarth SMNS coll. T476, 5♂ 23♀ 2 juveniles, max. 3.5mm, forest, VI.-VII.1975 leg. W. Hanagarth, SMNS coll. T477.

Colour: As in other species of the genus, dorsally reddish brown with light markings of muscle insertions, cephalothorax heavily spotted.

Cephalothorax: Linea frontalis missing, area slightly bulbous, linea supra-antennalis prominent, only slightly bent between antennal sockets, small lateral lobes, compound eyes consisting of about 7 ommatidia (fig. 39, Ctf).

Pereon: Tegument shiny, dorsum bearing scattered tricorn-like setae, coxal plates with reduced sulcus marginalis and flagelliform noduli laterales, insertion area with small concentric grooves, maximum of d/c-coordinates on coxal plate IV (fig. 39, Cx3/Cxp).

Pleon: Retracted from pereon, neopleurae visible, pleotelson with rounded distal margin, laterally straight, bearing few, short tricorn-like setae.

Appendages:

Antennula: Distal article apically with small tip and two aesthetascs, medially with tuft of about 9 aesthetascs, medial article slightly shorter than proximal one (fig. 39, An1).

Antenna: More slender than in preceding species, especially flagellum, distal article longest, proximal articles subequal in length, apical organ longer than distal article (fig. 39, An2).

Mandible: Pars molaris consisting of a four-branched molar penicil, pars intermedia bearing two penicils on left and one on right mandible, intermedial penicil slender (fig. 40, Mdl/r).

Maxillula: Similar to preceding species (fig. 40, Mx1).

Maxilla: Lateral lobe only slightly broader than medial lobe, bearing pectinate scales, medial lobe sparsely covered with trichiae, apically cuspidate (fig. 40, Mx2).

Maxilliped: As in *A. poeppigi* sp. n., but distal setal tuft of media article of palp comprising about 4 setae (fig. 40, Mxp).

Pereopods: Rather slender, especially pereopod 1, carpus with antenna-grooming brush and serrate ornamental sensory spine (fig. 41, Sc1), propus 1 with 2 distal sensory spines serrate on one side, dactylus with long inner claw and simple dactylar seta (fig. 41, Dac).

Sexual differentiation: Pereopods in both sexes similar (fig. 41, PE1-7).

Pleopods: Pleopod exopodites 3 and 4 elongate rhomboid with 3 to 4 sensory spines laterally, exopodite 5 more or less triangular, endopodites bilobate, no respiratory areas discernible in light microscope (fig. 42, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite rounded, endopodite rather stout, apex hammer-shaped, some minute spines caudally present, spermatic furrow laterally open, on lateral side of apex few granules (fig. 42/43, PL1). Pleopod 2 and 5 similar to preceding species (fig. 42, PL2/5).

Uropod: As in other species of genus.

Genital papilla: Ventral shield stout, ovoid, slightly surpassed by ductus ejaculatorii (fig. 42, Gen).

Comments: This is the sister species of *A. poeppigi* sp.n., differing mainly in the shape of male pleopod 1 endopodite. *A. malleus* has the two lobe more apically thus forming the "hammer"-like apical region. The endopodite is rather stout and as in the preceding species, it lacks the hyaline lamellae which are so characteristic for this genus although they do not represent an autapomorphy of *Androdeloscia* gen. n..

Etymology: The latin term "malleus" means "hammer" and refers to the shape of the male pleopod 1 endopodite.

***Androdeloscia opercularis* sp. n.**

Material: Venezuela: HOLOTYPE ♂ 3mm, Falcón, Parque Morrocoy, Península de Morrocoy, northern shore, Cueva del Indio (carstic cave with crushed ceiling, within detritus in small niches and edges of the rock, under stones on bottom leg, 18.03.1998 C. Schmidt MHNG coll.; PARATYPES 1♂ 3♀, same data as holotype, MHNG coll.; 9♂ 5♀, about 80 imm., same data as holotype, author's coll.

Colour: Purplish brown with pereon and pleon dorsally bearing light spots, medial line of pereon dark brown.

Cephalothorax: Linea frontalis absent, area slightly bulbous, linea supra-antennalis prominent, almost straight between antennal sockets, small lateral lobes present, compound eyes consisting of about 7 ommatidia (fig. 44, Ctf)

Pereon: Smooth and shiny tegument, coxal plates with sulcus marginalis along lateral border, no gland pores, insertion of nodulus lateralis bordered by concentric

structure of the cuticle, noduli long and flagelliform, on coxal plate IV more dorsally (fig. 44, Cx1/Cxp)

Pleon: Retracted from pereon, neopleurae of pleonites 3 to 5 adpressed, pleotelson with straight margins, bearing some prominent tricorn-like setae.

Appendages:

Antennula: Distal article apically with small tip and two aesthetascs, medially with tuft of about 10 aesthetascs, medial article much shorter than proximal one (fig. 44, An1).

Antenna: Peduncle rather slender, article 4 two times longer than article 3, flagellum with distal article as long as other joints, apical organ of two thirds the length of flagellum (fig. 44, An2).

Mandible: Pars molaris consisting of a five-branched molar penicil, pars intermedia bearing two penicils on left and one on right mandible, intermedial penicil slender (fig. 45, Mdl/r).

Maxillula: Medial endite with two penicils and apical tip, lateral endite bearing 4+5 teeth, inner set cleft, one short subapical tooth caudally, lateral fringe of trichi-form setae stepped (fig. 45, Mx1).

Maxilla: Lateral lobe slightly broader than medial one, fine hair-like setae arranged in parallel lines, medial lobe with 7 cusps apically (fig. 45, Mx2).

Maxilliped: Basipodite with sulcus lateralis, palp with proximal article bearing two setae, endite with knob-like penicil rostrally and tooth caudally (fig. 45, Mxp).

Pereopods: Slender with many tricorn-like setae, pereopod 1 to 6 with hyaline fringes on medial border, pereopod 1 with antenna-grooming brush on carpus, ornamental seta double-fringed serrate (fig. 46, Sc1), dactylus with short inner claw and simple dactylar seta, interungual seta apically swollen (fig. 46, Dac).

Sexual differentiation: Medial margin of pereopod 2 to 4 merus with fields of proximally directed cuticular setae (fig. 46, PE1-7).

Pleopods: Exopodite of pleopods 3 rhomboid, pleopod 5 almost triangular, pleopod 4 intermediate, laterally with 2 sensory spines, no respiratory areas discernible in light microscope, endopodites bilobate (fig. 47, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite circular with transverse folding medially of insertion in protopodite, comparatively large, endopodite proximally stout, muscle insertion area of M49 slightly protruding distally, apical part with lobe rostrally, apex protruding, rostrally with two rows of knobs, laterally serrate, caudally with hyaline lamellae, caudal row of spines from half-length of interlocking area with genital papilla not reaching apex (fig. 47, PL1). Pleopod 2 exopodite with broad rounded apex, bearing 3 sensory spines laterally, endopodite slender, distal half flagelliform (fig. 47, PL2), pleopod 5 exopodite triangular with slightly drawn out apex, caudally with medial guide slot for endopodite 2 (fig. 47, PL5).

Uropod: As in other species of the genus.

Genital papilla: Ventral shield rather slender with parallel margins, ductus ejaculatorii slightly surpassing ventral shield (fig. 47, Gen).

Comments: This is one of the species with rather simple apical part of the

pleopod 1 endopodite, from its congeners *A. opercularis* sp. n. is at once separable by the huge rounded exopodites of pleopod 1, which almost covers the pleoventral area.

Etymology: The species name "*opercularis*" refers to the big pleopod 1 exopodites of the male.

Androdeloscia silvatica (Lemos de Castro & Souza, 1986) comb. n.

Prosekia silvatica Lemos de Castro & Souza, 1986

Material: Venezuela: 2♂ (max. 3mm) 3♀ (ovigerous), Península de Paria, eastern part of south coast, 10°35.94'N 63°11.81'E, along brook with cocoa plantations and moist forest, upper part with water, concrete pond with moist bottom under leaf litter, leg. 09.04.1998 C. Schmidt, MNHG coll.; 3♂ 11♀ same data, author's coll.; 2♂, 3♀ (ovigerous) Península de Paria, Puy Puy 10°42.00'N 62°58.05'W, bay with sandy beach, coconut palms, surrounded by dry mountains, banana plantation at the eastern part of the bay, in leaf litter, leg. 31.03.1998 C. Schmidt, MUMV coll.; 17♂ 12♀ (ovigerous) 6mm same data, author's coll.

Colour: Dorsally purplish brown with pale spots on pereon, medial line dark brown, white central stripe on pereonites I to IV, double line on pereonites V to VII, pleon unmarked.

Cephalothorax: Linea frontalis lacking, linea supra-antennalis and lamina frontalis present, small lateral lobes, compound eyes consisting of seven ommatidia (fig. 48, Ctf).

Pereon: Tegument smooth and shiny, coxal plates lacking gland pores, sulcus marginalis reduced, noduli laterales present, long and flagelliform, with maximum of d/c-coordinates on coxal plate IV (fig. 48, Cx3/Cxp).

Pleon: Retracted from pereon, neopleurae of pleonites 3 to 5 adpressed, pleotelson with straight distal margin, bearing some tricorn-like setae.

Appendages:

Antennula: Three-articulate with prominent proximal article, distal joint bulbous, bearing two distinct sets of aesthetascs (fig. 48, An1).

Antenna: Antennal peduncle composed of five articles with length ratio 1: 2: 2: 3: 4, densely covered with tricorn-like setae, flagellum composed of three articles, distal one bearing prominent apical organ, as long as flagellar articles 1 and 2 together (fig. 48, An2).

Mandible: Pars intermedia only sparsely setose, molar penicil composed of 3 rather short branches, right lacina mobilis deeply sinuous apically (fig. 49, Mdl/r).

Maxillula: Medial endite with small tip and two penicils apically, medial endite with subapical tooth and 4+5 teeth, four of innermost set cleft (fig. 49, Mx1).

Maxilla: Lateral lobe two times broader than medial one, bearing trichiform setae and pectinate scales, medial lobe bearing stronger setae medially, apically with about six cusps (fig. 49, Mx2).

Maxilliped: Basipodite with conspicuous sulcus lateralis, endite with two teeth on caudal surface, small knob-like penicil rostrally, proximal article of palp bearing two setae, distal lobes with setal tufts, proximal one consisting of two setae (fig. 49, Mxp).

Pereopods: Pereopods rather slender, with setal tuft laterodistally on carpus,

carpus 1 with antennal-grooming brush, ornamental sensory spine serrate (fig. 50, Sc1), dactylus with medium-sized inner claw and simple dactylar seta, interungual seta straight (fig. 50, Dac), merus 2 to 4 with hyaline cuticular scales (fig. 50, PE2).

Sexual differentiation: Male pereopod 7 with two small lobes mediodistally, caudally of distal sensory spine, proximally directed lobe on medioproximal edge, covered with small scales (fig. 50, PE1-7).

Pleopods: Similar to preceding species, endopodites more triangular (fig. 51, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite with slight point, endopodite with broad basis, followed by broad part without musculature with distally directed lateral protrusion, apical part decurved laterally, apex bearing three rows of knobs, caudally a trace of hyaline lamellae, row of spines short (fig. 51, PL1). Pleopod 2 exopodite triangular with one sensory spine laterally, endopodite with flagelliform distal half (fig. 51, PL2). Pleopod 5 exopodite with guide slot for pleopod 2 exopodite (fig. 51, PL5).

Uropod and genital appendage : See generic diagnosis (fig. 51, Gen).

Comments: *A. silvatica* shares the character, that the pereopod 7 merus bears three lobes medially with the following species. This character was not depicted by Lemos de Castro & Souza in the original description (1986), possibly the examined specimen was a young male or the pereopod 7 was substitutional and, therefore, does not show all the characters of a mature male. Its autapomorphies are the shape and position of lobes on merus 7 and the shape of pleopod 1 endopodite, which looks like a tin-opener of a Swiss Officer's knife.

***Androdeloscia pseudosilvatica* sp. n.**

Material: Venezuela: HOLOTYPE 1♂ 3mm, Quebrada de la Virgen, 8°58.20'N 69°47.57'W, dry plain, agriculture, near a well under flower pots beneath a tree in puddle, leg. 25.03.1998 C. Schmidt; PARATYPES 1♂ 1♀ (marsupium), same data as holotype, MHNG coll.; 4♂ 1♀ (marsupium) 1imm. same data as holotype, author's coll.

Colour: Dorsally reddish to purplish brown, pereon spotted with light markings, pereonites V to VII with light medial spot, pleon uniformly coloured.

Cephalothorax: Vertex strongly arched, linea frontalis reduced, linea supra-antennalis and slight lateral lobes present, no lamina frontalis, compound eyes composed of about seven ommatidia (fig. 52, Ctf).

Pereon: Tegument rather smooth with scattered tricorn-like setae, coxal plates with sulcus marginalis and nodulus lateralis (fig. 52, Cx3/Cxp), no gland pores visible at 400x magnification.

Pleon: Set apart from pereon, small neopleurae on pleonites 3 to 5, laterally adpressed, pleotelson with straight lateral margins, bearing few tricorn-like setae.

Appendages:

Antennula: As in other species of the genus. (fig. 52, An1)

Antenna: Peduncle rather stout, length ratio from proximal to distal 1: 2: 2: 3: 4, flagellum three-articulate, joints subequal in length, medial and distal article with pair of aesthetascs, apical organ long and slender, half of length of flagellum, short

free sensilla (fig. 52, An2).

Mandible: Molar penicil consisting of about 4 branches, pars intermedia bearing two on left and one penicil on right mandible, additional plumose seta proximally (fig. 53, Mdl/r).

Maxillula: Medial endite with two penicils and inconspicuous subapical tip, lateral endite apically bearing 4+5 teeth, four of inner set cleft, laterally with trichiae, medial area with trichiae fused and forming hyaline plaques (fig. 53, Mx1).

Maxilla: Lateral lobe broader than medial one, slightly setose, medial lobe bearing about 5 cusps (fig. 53, Mx2).

Maxilliped: Basipodite with sulcus lateralis, endite with small knob-like penicil on rostral side, palp with three setal tufts medially (fig. 53, Mxp).

Pereopods: Pereopod 1 with antenna-grooming brush, ornamental sensory spine double-fringed serrate (fig. 54, Sc1), hyaline cuticular scales on merus 1 and 2, dactylus with short inner claw and simple dactylar seta (fig. 54, Dac).

Sexual differentiation: Male pereopod 7 merus with two crenulate lobes mediodistally, another lobe more proximally at insertion of basal sensory spine (fig. 54, PE1-7).

Pleopods: Pleopod endopodites slightly bilobate, exopodites 3 and 4 rhomboid, with 3 lateral sensory spines, no respiratory areas (fig. 55, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite rounded with small distal point, endopodite basis strong, a small furrow separating muscle insertion M49 from muscle-free part, apical third much more slender, slightly directed laterally, bearing small knobs rostrally, caudal row of spines short, lateral margin of spermatic channel not reaching proximally to interlocking area with genital papilla, trace of hyaline lamellae apically (fig. 55, PL1). Pleopod 2 and 5 similar to preceding species (fig. 55, PL2/5).

Uropod and genital papilla: As in other species (fig. 55, Gen).

Comments: Similar to *A. silvatica*. *A. pseudosilvatica* sp. n. bears three lobes on merus 7 in the male, the position is a little bit different. The pleopod 1 endopodite is not as drawn out as in the preceding species, only a small furrow is present laterally. Different to *A. silvatica*, this species has a complete sulcus marginalis on the coxal plates and lacks the lamina frontalis.

Androdeloscia dalensi sp. n.

Material: Venezuela: HOLOTYPE ♂ 4mm, Andes, road from Timotes to Mérida, 8°53.72' N 70°47.99'W 3400 +- 500m, very steep northern slope, covered with Bryophyta, Pteridophyta, Poaceae, Ericaceae, between Bryophyta, leg. 23.03.1998 C. Schmidt, MNHG coll.; PARATYPES 1♂ 2♀ (ovigerous), same data as holotype, MHNG coll.; 2♂ 3♀ (ovigerous) 1 imm., same data as holotype, author's coll.

Colour: Pereon and pleon dorsally purplish brown, both with prominent pale patches.

Cephalothorax: Linea frontalis lacking, linea supra-antennalis and lamina frontalis present, small lateral lobes, compound eyes consisting of eight ommatidia (fig. 56, Ctf).

Pereon: Tegument smooth and shiny, coxal plates lacking gland pores and

sulcus marginalis, noduli laterales present, long and flagelliform, more dosally inserted on coxal plate IV (fig. Cx3/Cxp).

Pleon: Retracted from pereon, neopleurae visible, adpressed; pleotelson with straight distal margin, bearing some slender tricorn-like setae.

Appendages:

Antennula: Three-articulate, medial article shortest, distal article apically with small tip and two aesthetascs, medially with about 10 aesthetascs (fig. 56, An1).

Antenna: Peduncle rather stout, article 5 only slightly longer than flagellum and peduncular article 4, three-articulate flagellum with long apical organ, half as long as flagellum (fig. 56, An2).

Mandible: Molar penicil consisting of 5 branches, left pars intermedia with two penicils and several coniform setae, right bearing few setae and one penicil (fig. 57, Mdl/r).

Maxillula: Medial endite with two penicils apically, lateral endite with stepped setal fringe laterally, apically with 4+5 slender teeth, five of inner set cleft, subapical tooth caudally (fig. 57, Mx1).

Maxilla: Lateral lobe two times broader than medial, bearing several trichiform setae and pectinate scales, apically about 6 cusps (fig. 57, Mx2).

Maxilliped: Basipodite with short sulcus lateralis, endite with two teeth caudally and prominent knob-like penicil rostrally, palp with two unequal setae on proximal article, medial and distal article each bearing setal tuft, lateral setae rather stout (fig. 57, Mxp).

Pereopods: Slender with short setal tufts on carpus laterodistally, antenna-grooming brush of carpus 1 dense, lateroproximally with 3 tricorn-like setae, ornamental sensory spine serrate (fig. 58, Sc1), sensory spine of propus 1 pointed, subapically serrate (fig. 58, Sp1), dactylus with short inner claw, dactylar seta simple (fig. 58, Dac).

Sexual differentiation: Male pereopod 7 carpus with proximal sensory spine very strong, acute and decurved, standing on protrusion (fig. 58, PE1-7).

Pleopods: Pleopod exopodites 3 rhomboid, pleopod 4 subquadrangular, pleopod 5 triangular, with 1 to 3 sensory spines laterally, without respiratory area, endopodites bilobate (fig. 59, PL1-5).

Sexual differentiation: Male pleopod 1 exopodite rounded, endopodite slender, transverse groove one third before apex, distal part decurved laterally, bearing a saddle-shaped lobe and several small knobs, caudal row of spines only on last third subapically (fig. 59, PL1). Pleopod 2 with triangular exopodite, bearing two sensory spines laterally, endopodite with distal half flagelliform (fig. 59, PL2), pleopod 5 exopodite with guide slot for apex of pleopod 2 endopodite (fig. 59, PL5).

Uropod: As in the other species.

Genital appendage: Ventral shield slightly surpassed by ductus ejaculatorii, rather slender (fig. 59, Gen).

Comments: *A. dalensi* sp. n. is a somewhat isolated species within the genus. The male has a strong sensory spine on the carpus of pereopod 7, the pleopod is bent laterally, some knobs are present apically, but no lamellae. The sulcus marginalis of

the coxal plates is completely reduced. Within this genus these characters can be found only in this species. The outline of the body is more slender than in other congeners.

Etymology: This species is dedicated to Dr H. Dalens (Toulouse) in honour of his life's work on Oniscidea.

***Androdeloscia digitata* sp. n.**

Material: Brazil: HOLOTYPE ♂ 3.5mm, Amazon rain forest near Manaus, EMBRAGA field project, MNHG coll.; PARATYPES 1♀ (ovigerous) MNHG coll.; 5♂ 1♀ limm same data as holotype, author's coll.

Colour: Purplish brown with many light spots dorsally on pereon, medial line marked by white spots on pereonite III to VII and pleonites.

Cephalothorax: Linea frontails lacking, linea supra-antennalis present, small lateral lobes and slight lamina frontalis, compound eyes consisting of about 8 ommatidia (fig. 60, Ctf).

Pereon: Pereonites covered with small tricorn-like setae, tegument smooth, coxal plates without sulcus marginalis and gland pores, noduli laterales long, flagelliform, nodulus of coxal plate IV the most dorsal one (fig. 60, Cx3/Cxp).

Pleon: Retracted from pereon, neopleurae of pleonites 3 to 5 conspicuous, pleotelson with straight margins, bearing some prominent tricorn-like setae.

Appendages:

Antennula: Three-articulate, medial tuft consisting of about 10 aesthetascs (fig. 61, An1).

Antenna: Fairly slender, peduncular article 2 stout, flagellum three-articulate, joints subequal in length, apical organ half as long as flagellum (fig. 60, An2).

Mandible: Pars molaris consisting of a four-branched molar penicil, pars intermedia bearing two penicils on left and one on right mandible, intermedial penicil slender (fig. 61, Mdr).

Maxillula: Medial endite bearing two penicils apically, lateral tip, lateral endite with 4+4 teeth, inner set cleft, subapical tooth caudally (fig. 61, Mx1).

Maxilla: Lateral lobe slightly broader than medial one, bearing scattered pectinate scales, medial endite apically with 5 cusps (fig. 61, Mx2).

Maxilliped: Basipodite with sulcus lateralis, palp with one small seta on proximal article, endite with knob-like penicil rostrally and two strong teeth caudally (fig. 61, Mxp).

Pereopods: As in the preceding species, dactylar seta rather short (fig. 62, Sc1/Dac).

Sexual differentiation: Male pereopod 7 with rostral protrusion on mediobasal margin, half as long as carpus with distally inserted sensory spine (fig. 62, PE1-7).

Pleopods: Pleopod exopodites subtriangular, laterally bearing 2 to 4 sensory spines, endopodites slightly bilobate, no respiratory areas (fig. 63, PL1-5).

Sexual differentiation: Male pleopod 1 with pointed exopodite, medially widely rounded, endopodite with small distal protrusion of basal part, distal third

slender, apex slightly bulbous, crenulate, with hyaline lamellae caudally and rostrally directed lobe (fig. 63, PL1). Pleopod 2 exopodite triangular with two lateral sensory spines, exopodite with flagelliform distal half (fig. 63, PL2), pleopod 5 with medial guide slot and distinctly pointed apex (fig. 63, PL5).

Uropod and genital appendage: As in other species of the genus (fig. 63, Gen).

Comments: Another member of *Audrodeloscia* gen.n. bearing a lobe on the male merus 7, but different to the preceding species, in *A. digitata* sp.n. the lobe is very long, directed distally and bears a sensory spine at its tip. Together with its characteristically shaped male pleopod 1 endopodite, the species cannot be confused with other species. The lack of a sulcus marginalis is most probably explained as convergence to other species of *Audrodeloscia* gen. n.

Etymology: The species name is derived from the latin "*digitus*" which means "finger" and refers to the protrusion on the male pereopod 7 merus.

PHYLOGENY AND BIOGEOGRAPHY

Within the genus, some distinct groups can be traced. The phylogeny of the whole genus shall be elucidated in the following, the relationships are figured in fig. 65. For the outgroup comparison the species *Prosekia rutilans* (Vandel, 1952), *Andeniscus silvaticus* Verhoeff, 1941 and *Ischioscia martinae* Leistikow, 1997 were used.

As stated above, *Audrodeloscia* gen. n. belongs to a group of South American "philosciids" which are characterized by the peculiar shape of the antennula. The autapomorphies of the genus are the reduction of the linea frontalis and the shape of the pleopod 5 exopodite in the male with its guide slot structure (character set 1). The former character is not strongly supporting the monophyly since it is a reductive character. Thus, it can easily occur in evolution by a single substitutional event in the genome. The latter character is rather complex and may thus warrant monophyly. The evolution of several characters are of importance within this genus: sexual differentiations of the pereopods and the structure of the male pleopod 1. The primitive character state of the male pleopod 1 endopodite is characterized by a set of hyaline lamellae on the medial margin of the apex. The most basal species of this genus is *A. dalensi* which shows the autapomorphies of the genus but has a serrate distal sensory spine of the propus 1 and a mandibular penicil composed of more than 5 branches, both plesiomorphic characters even found in *P. rutilans*; autapomorphies are the reduction of both lamina frontalis and hyaline lamellae on the male pleopod 1 endopodite.

A. hamigera is the next derived species in the shape of the sensory spine (character 2) but has still a prominent molar penicil. All the other species are united by the molar penicil consisting of a long and three short branches, a reductive character but may be used for the phylogenetic reconstruction because of the correspondence of the number of branches and their length (character 3). Half of the species, the members of group A, are equipped with meral lobes and humps in the male, the pleopod 1 exopodite is enlarged, bearing a small point apically (character

set 4). The former character can also be found in the genus *Audenouiscus* Verhoeff, 1941. Since the latter genus is excluded from the monophyletic taxon *Audrodelsocia* by the plesiomorphic character state of the male pleopod 5 as far as it is known and the slightly different shape of the cephalothorax, an autapomorphy of *Audenouiscus*, there is evidence for either an analogy or the expression of a silent gene in both genera (cf. STURM 1994). Additionally the lobes are different in their position in *Audenouiscus* and *Audrodelsocia*. Within group A, four species can be separated in group B by having the male pleopod 1 endopodite with slight lateral humps (character 5). All the species save *A. digitata* have this slight hump more prominent and somewhat enlarged distally (character 6). The species *A. silvatica* (Lemos de Castro & Souza, 1986) and *A. pseudosilvatica* have the synapomorphy of three lobes on the merus, one subproximally and two distally on the medial margin (character 7). The following four species, group C, the adelphotaxon of the preceding ones, are characterized by these apomorphies (character set 8): Distal sensory spine of propus 1 with one tip, pleopod 1 endopodite apically bulbous, pleopod 1 exopodite with distal point laterally (not medially as in pleopod 2, the exopodite looking "inverted"). In *A. ferrarai* the lobes of the merus are slight, the pleopod 1 endopodite is straight, the plesiomorphic character state, while *A. taitii*, *A. uerolobata*, *A. loughiunguis* the endopodite is twisted, the spermatic channel ending on the rostral side, males have fields of cuticular scales on the merus of pleopod 2 to 6 (character set 9). In this group, *A. uerolobata* and *A. loughiunguis* most probably are sister species, with having strong meral lobes and a pleopod 2 exopodite which is distally obtusely rounded (character set 10). The latter character is less evolved in *A. taitii* and the meral lobe is missing, this is most parsimoniously explained by reduction of this structure.

Another phyletic lineage heads to a species group of Caribbean and Amazonian distribution, the group D: The last five species are united by the lack of hyaline lamellae on the male pleopod 1 endopodite, all the species share a rather slender maxilliped with the distolateral edge of the basipodite almost rectangular and not rounded as in the other species (character set 11). In the next evolutionary step the knobs and bumps are concentrated apically on both sides of the endopodite, the apex looking like a fir cone (group E, character 12). Within this group, *A. feistae* and *A. plicatipus* are sister species. They are united by the shape of the basal part of pleopod 1 endopodite, it is broad but then narrowed laterally. Thus, the part containing M49 is short compared to the other species (character 13). The adelphotaxon of group E are *A. poeppigi* and *A. wallens* with the male pleopod 1 endopodite bearing two strong lobes which are twisted out of the sagittal plane, the spermatic channel is medially open (character set 14).

From the biogeographic point of view, the different groups are found in the Amazonian and Caribbean subregion of the Neotropical realm. The basal species, *A. dalensi*, *A. hamigera* and *A. opercularis* are distributed in Venezuela, which is part of the Caribbean subregion. The group of species with meral lobes can be found in most of Amazonia and even in Venezuela, they may have been split off in the two groups with the species of the group C are exclusively found in the foothills of the Andes, part of the Amazonian subregion, as are the members of the group D, while their

sister group (group B) is distributed in Venezuela and the central Amazonian sub-region. Interestingly, *A. silvatica* can be found in both subregions; in Venezuela it was found in the east, on Península de Paria, while its sister species was found in the western part of Venezuela in the foothills of the Cordillera de Mérida. They may vicariate each other. The species from Amazonia are more basal and may be close to *A. dalensi* save *A. tarumae* (Lemos de Castro, 1984) which has two lobes on the male merus 7, and is a link between *A. digitata* and *A. silvatica*. The other species are described in LEMOS DE CASTRO & SOUZA (1986) and LIMA (1997).

Until now, the collecting of Oniscidea in South America was very scarce. Therefore, our knowledge on the distribution of genera is rather patchy. As one can deduce from the above mentioned, the genus *Androdeloscia* gen. n. is widely distributed in the Amazonian and Caribbean subregion of the Neotropis. From the point of our knowledge, it has a radiation centre in the eastern slopes of the Andes, where many species can be found occurring sympatrically. They may be found in different habitat, but there is more research needed to elucidate this question. The relatively high diversity in the Andean foothills was explained by the successive settlement by forms from the Amazon valley via dispersal along rivers and colonization by forms from the higher Andean regions. Possibly, a mix of species from both altitudinal regions can be found in this area. Such a faunal composition was postulated by SIMPSON & HAFFER (1978), since these areas have strongly been affected by both climatic changes and oreographic transformantions from the Tertiary on. The species in this area have the most diverse pleopodal structures in the males. This diversity must be explained by evolving in isolated habitats for a considerable period. Once the species barriers were established, there was a selective pressure to evolve unequivocal copulatory devices, a process of character displacement, selecting the extremes within the intra-specific variation. Hence, the some most complex male pleopods can be found in the eastern slopes of the Andes with their high number of sympatric species while in Venezuela the male pleopod 1 endopodites are structurally simple.

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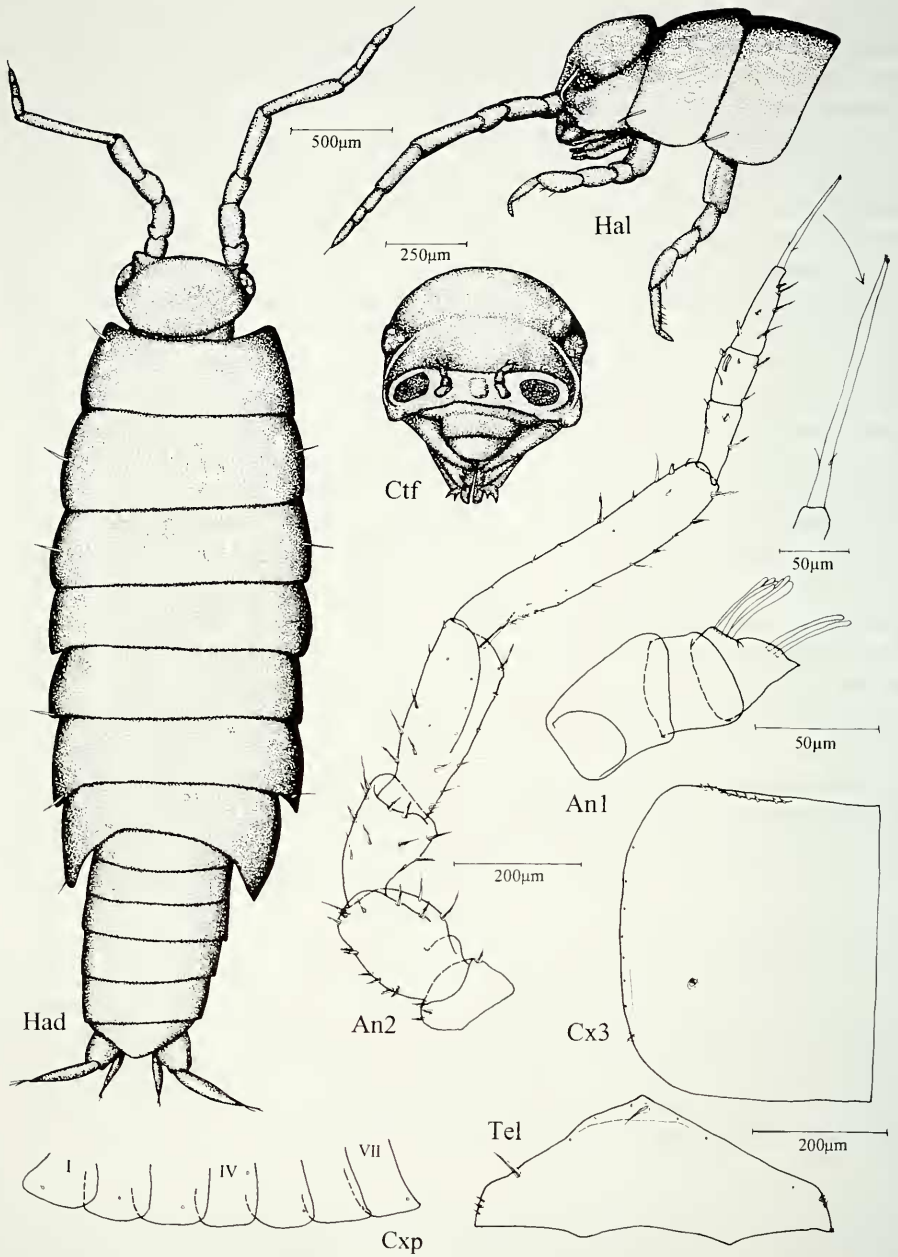


FIG. 1

Androdeloscia hamigera (Vandel, 1952). An1 antenna; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.



FIG. 2

Androdeloscia hamigera (Vandel, 1952). Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

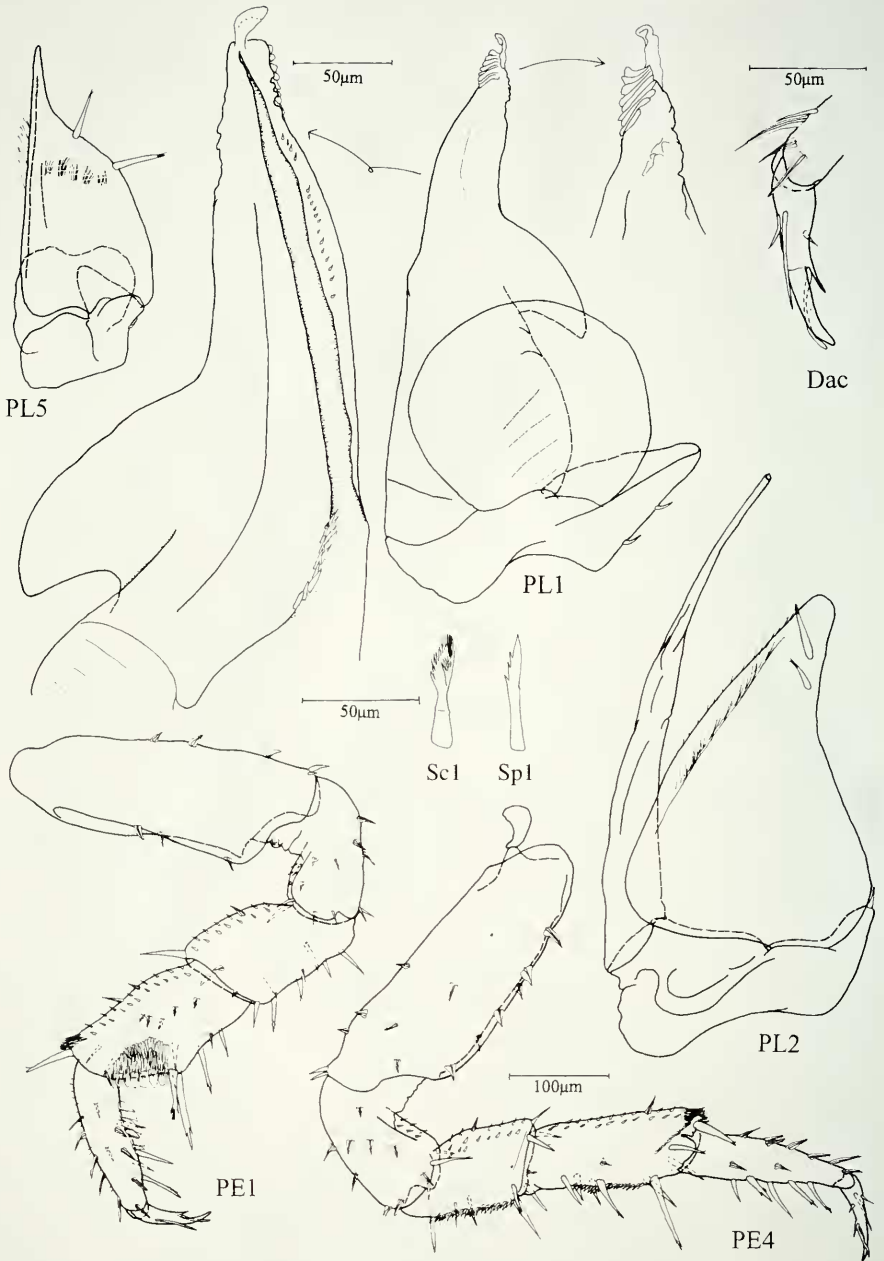


FIG. 3

Androdeloscia hamigera (Vandel, 1952). Dac dactylus 1 in rostral view; PE1/4 pereopods 1 (rostral view) and 4 (caudal view); PL1-5 pleopods 1 to 5, with details of pleopod 1 endopodite; Sc1 ornamental sensory spine of carpus 1; Sp1 distal sensory spine of propus 1.

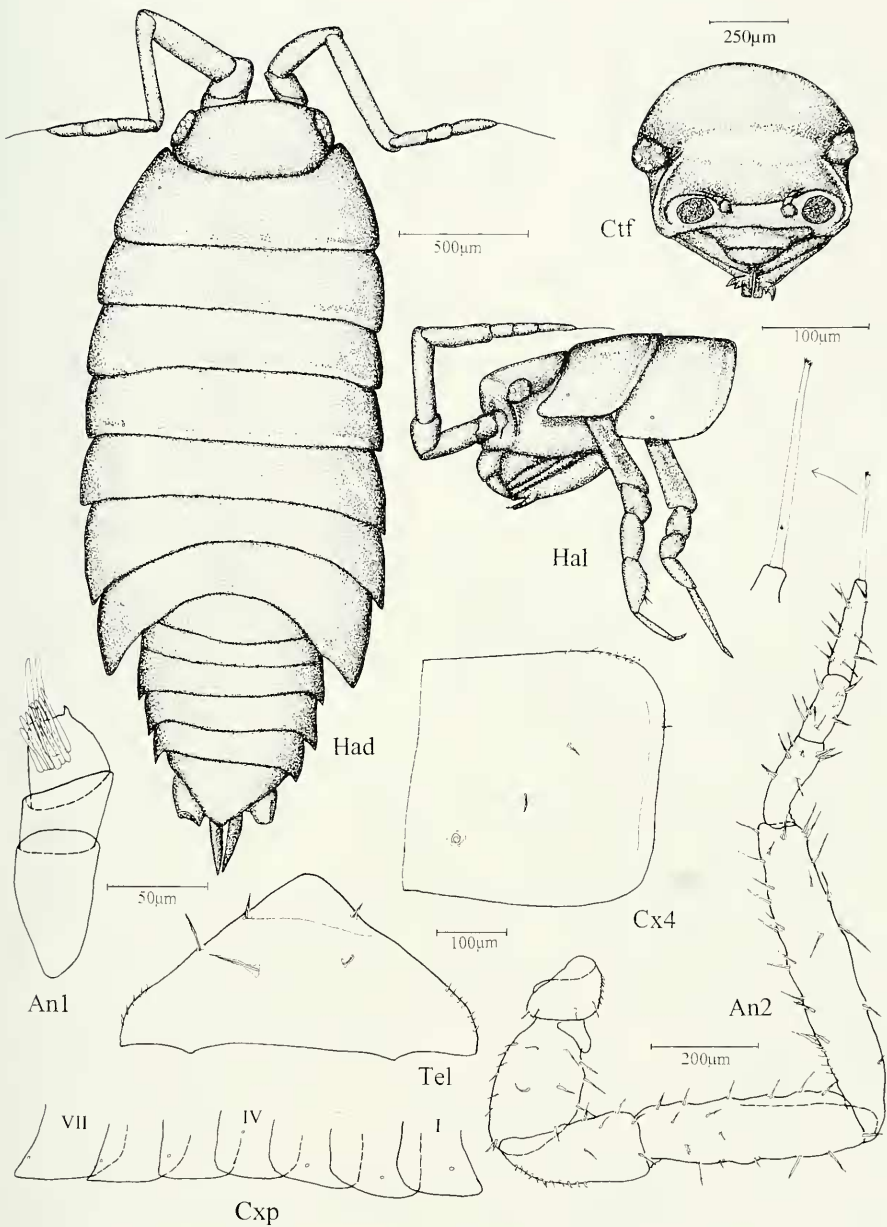


FIG. 4

Androdeloscia conipus sp. n. holotype ♂ 4mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx4 coxal plate 4; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

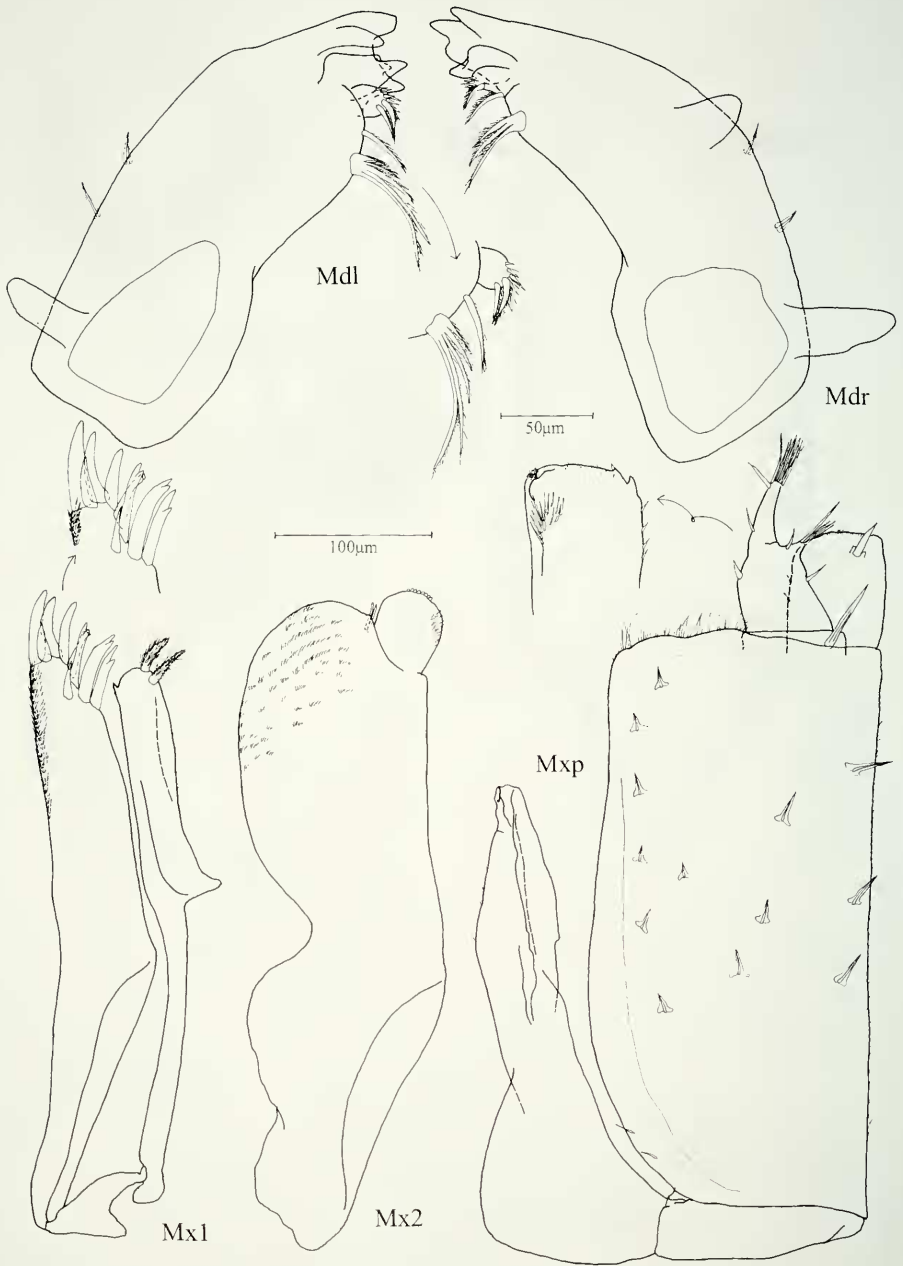


FIG. 5

Androdeloscia conipus sp. n. holotype ♂ 4mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

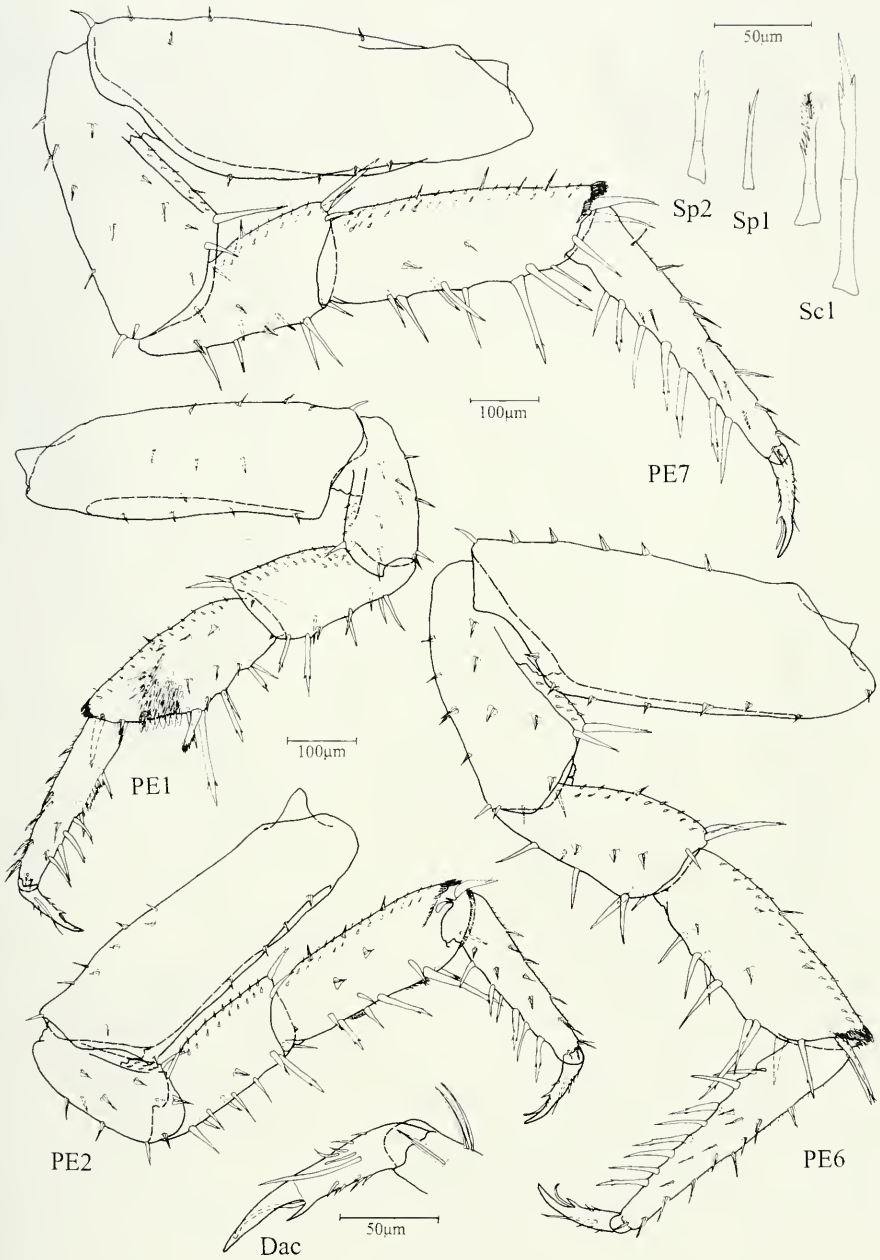


FIG. 6

Androdeloscia conipus sp. n. holotype ♂ 4mm. Dac dactylus 1 in rostral view; PE1-7 pereopods 1 (rostral view), 2, 6, 7 (caudal view); Sc1 ornamental sensory spine of carpus 1; Sp1 distal sensory spine of propus 1; Sp2 sensory spine of propus 2.

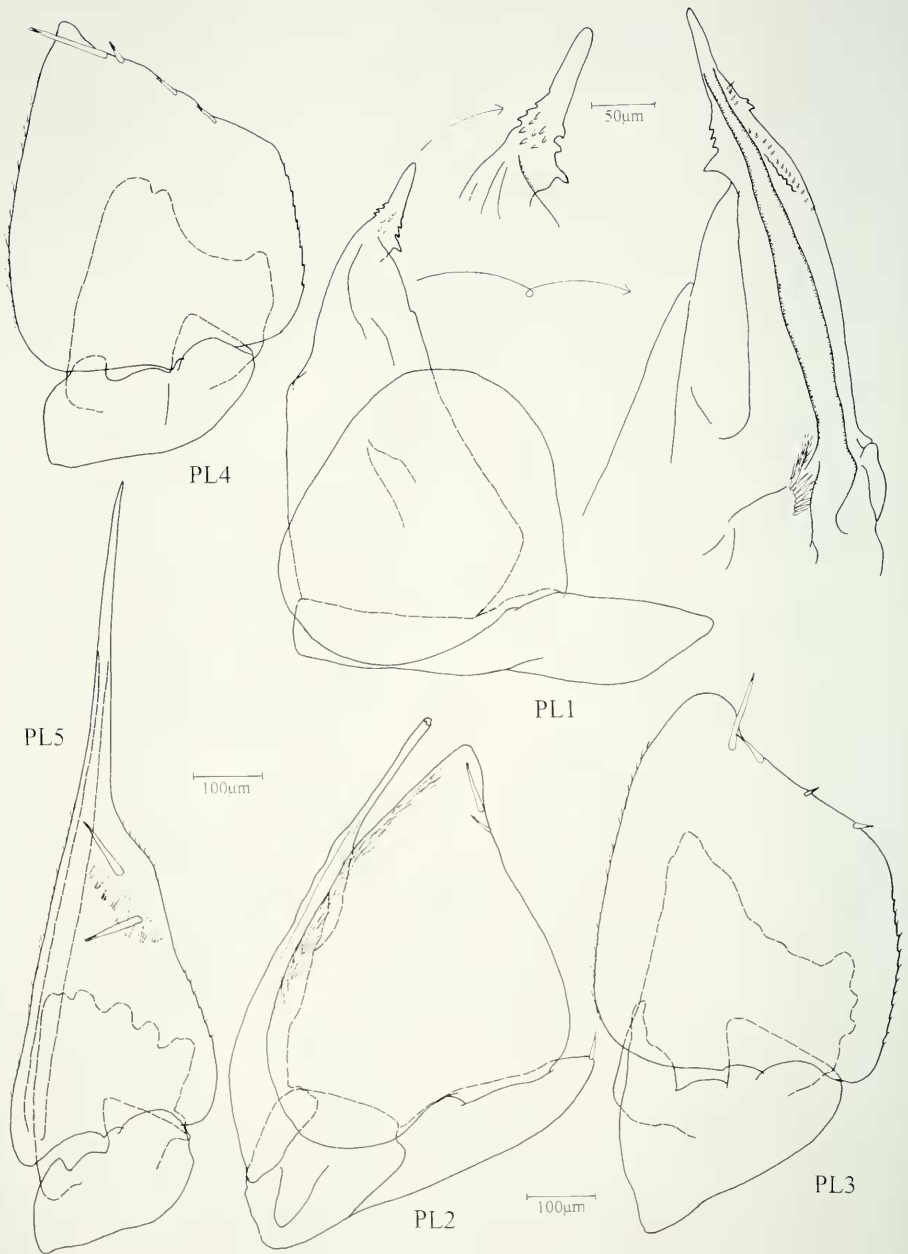


FIG. 7

Androdeloscia conipus sp. n. holotype ♂ 4mm. PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and rostral view.

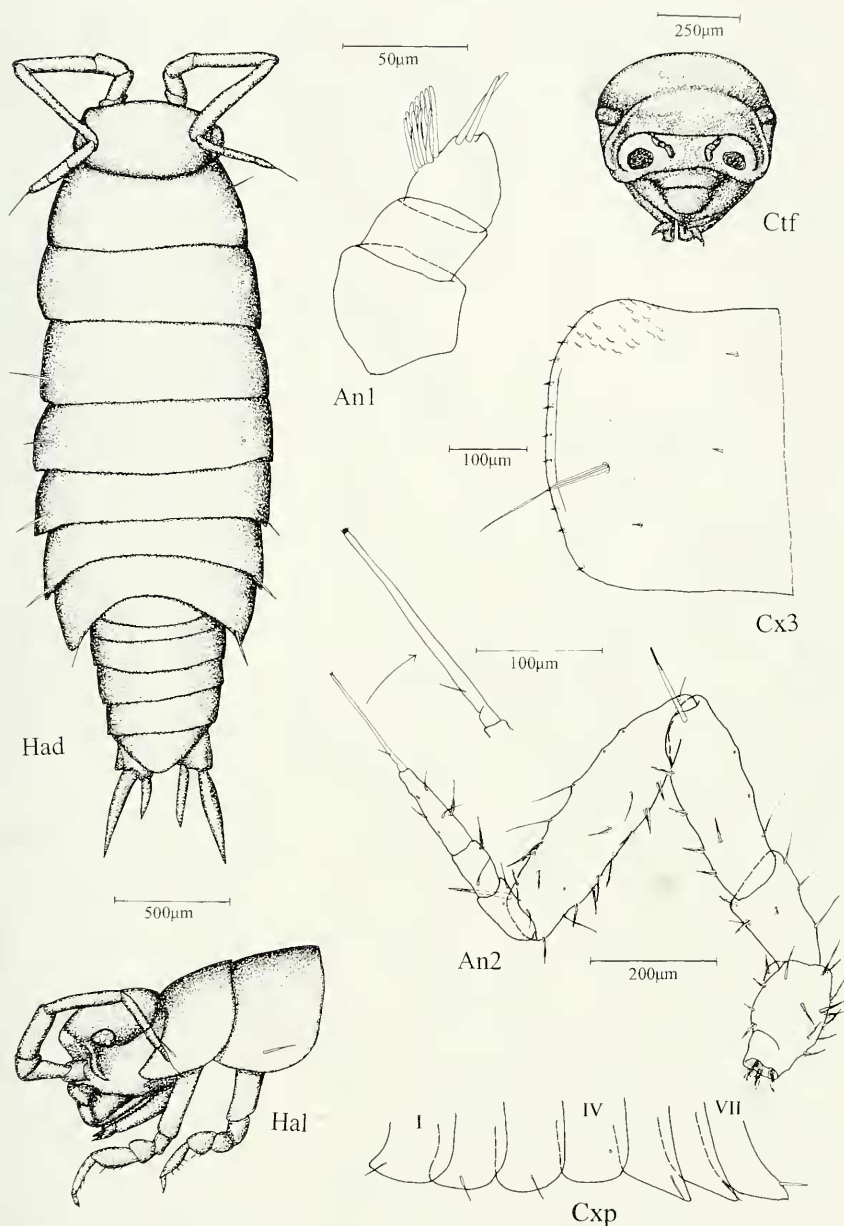


FIG. 8

Androdeloscia feistae sp. n. holotype ♂ 3mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pletelson.

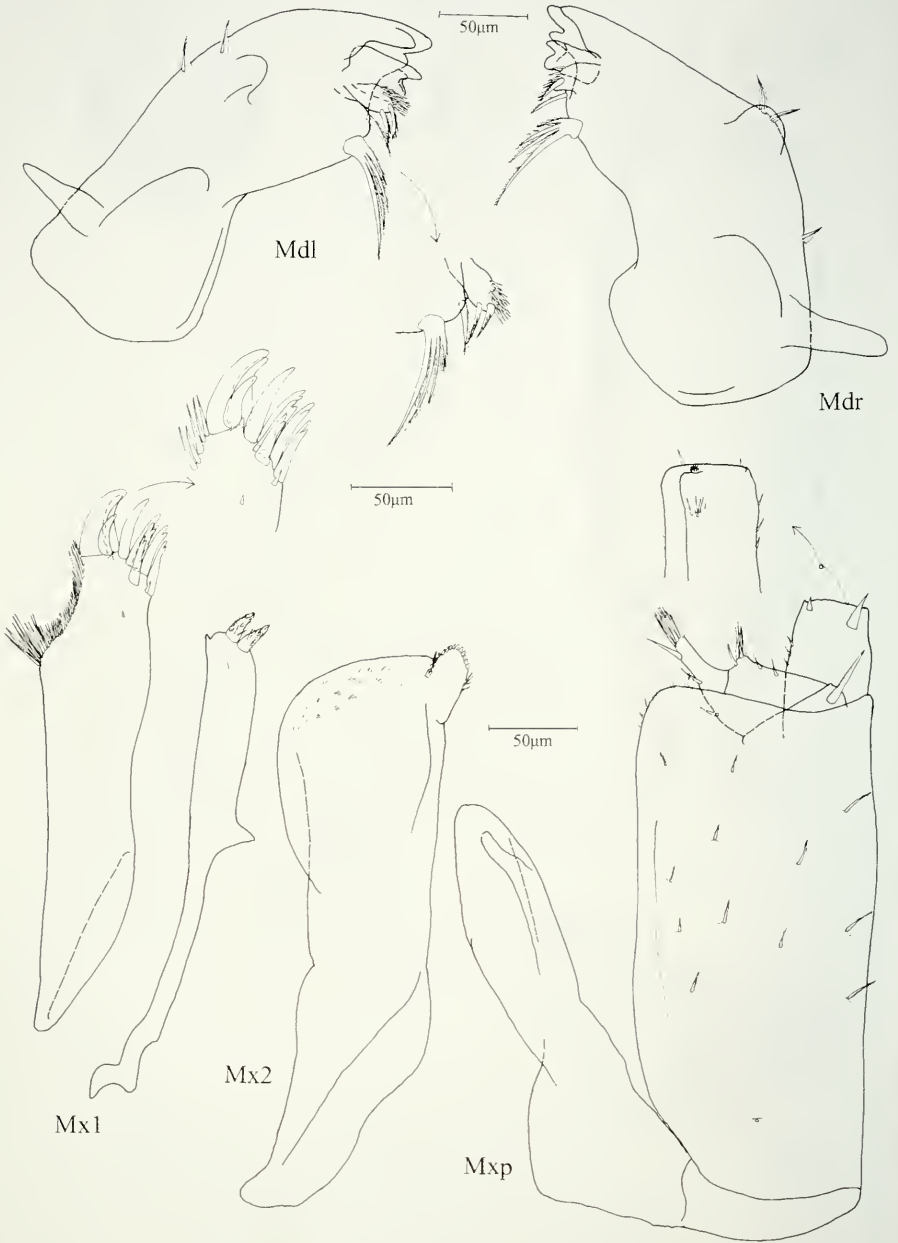


FIG. 9

Androdeloscia feistae sp. n. holotype ♂ 3mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

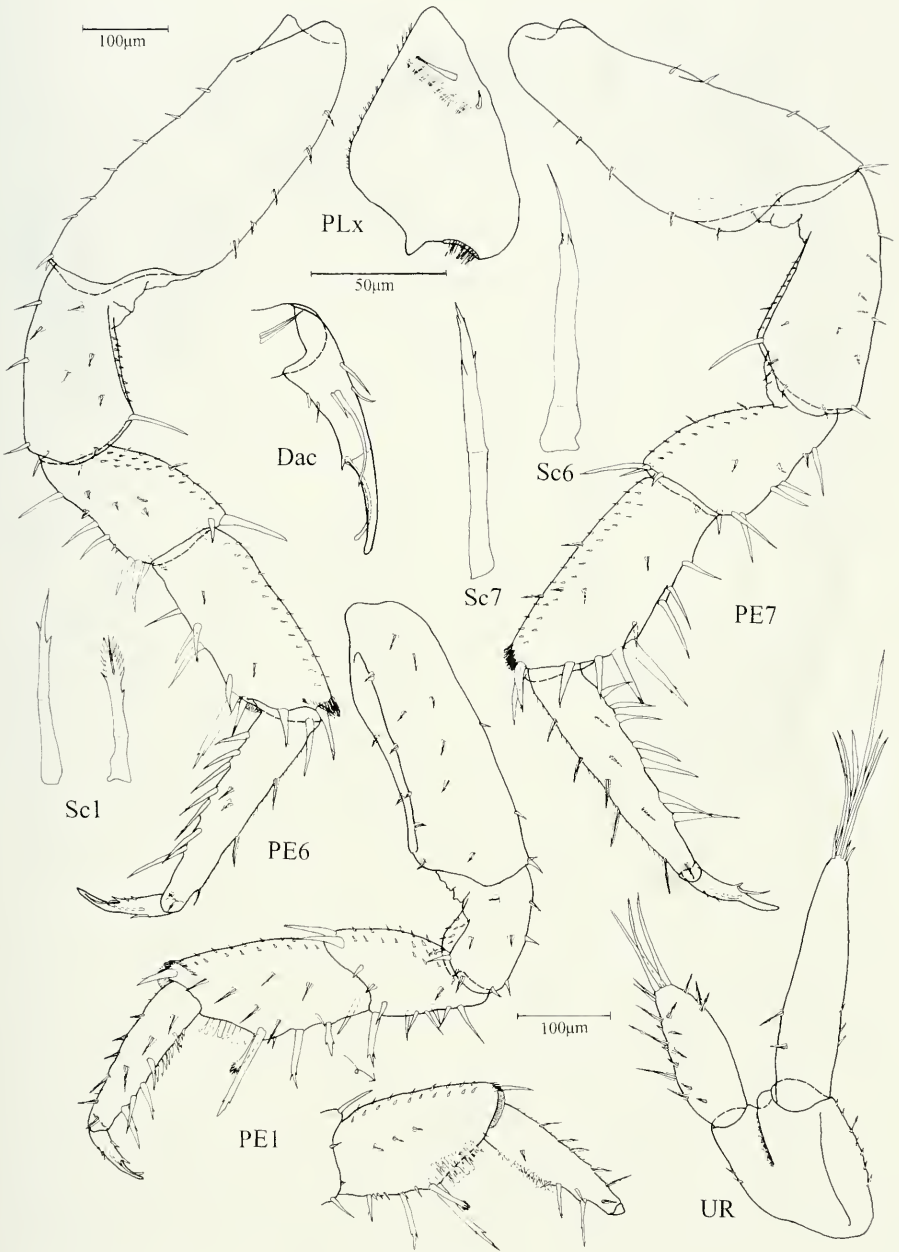


FIG. 10

Androdeloscia feistae sp. n. holotype ♂ 3mm. Dac dactylus 1 in rostral view; PE1-7 pereopods 1, 6, 7 (caudal view) with carpus 1 in rostral view; PLx pleopod 5 exopodite of female (Paratype 3.5mm); Sc1 ornamental and medial sensory spine of carpus 1; Sc6/7 sensory spines of carpus 6/7; UR uropod.

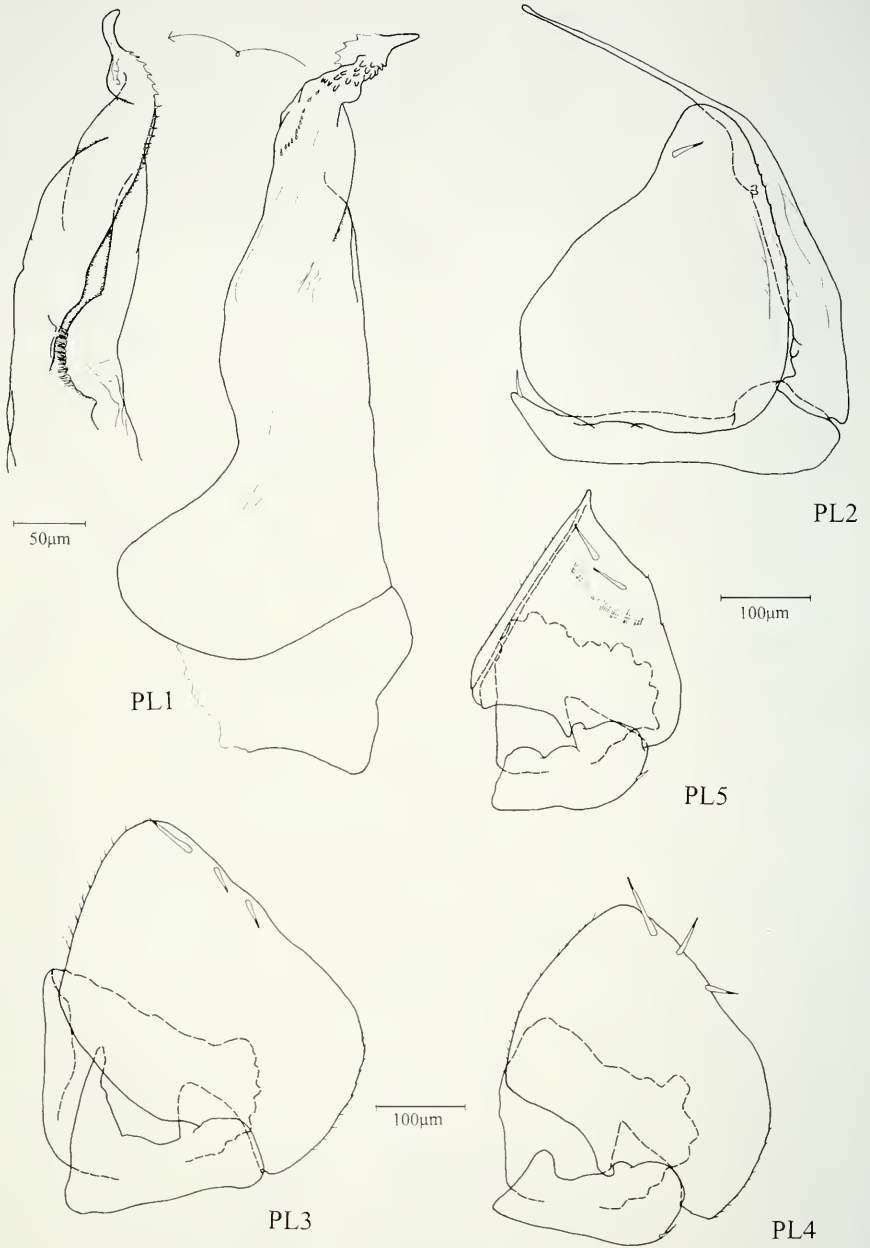


FIG. 11

Androdeloscia feistae sp. n. holotype ♂ 3mm. PL1-5 pleopods 1-5, rostral view with detail of endopodite 1 in caudal view.

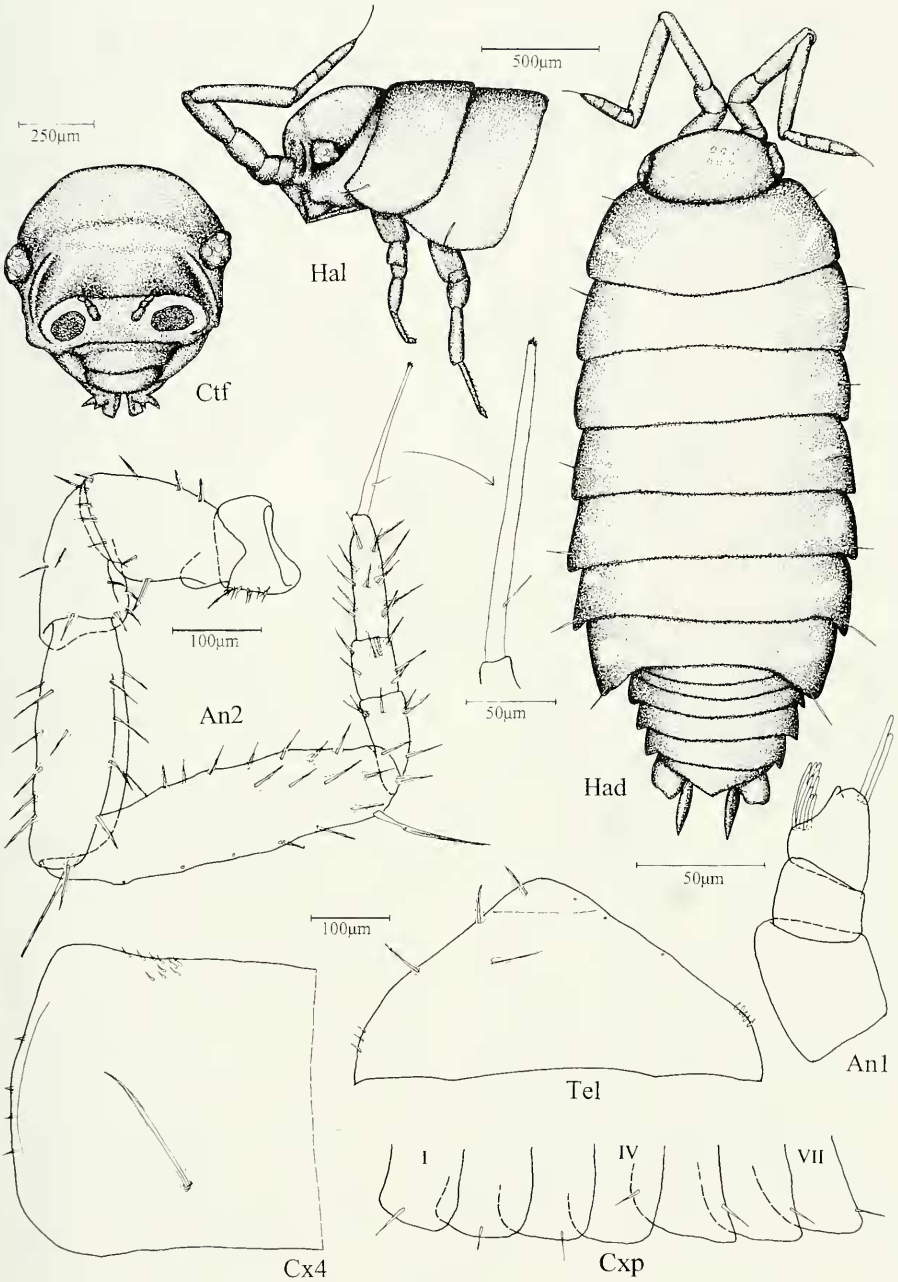


FIG. 12

Androdeloscia plicatipes sp. n. holotype ♂ 3mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx4 coxal plate 4; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

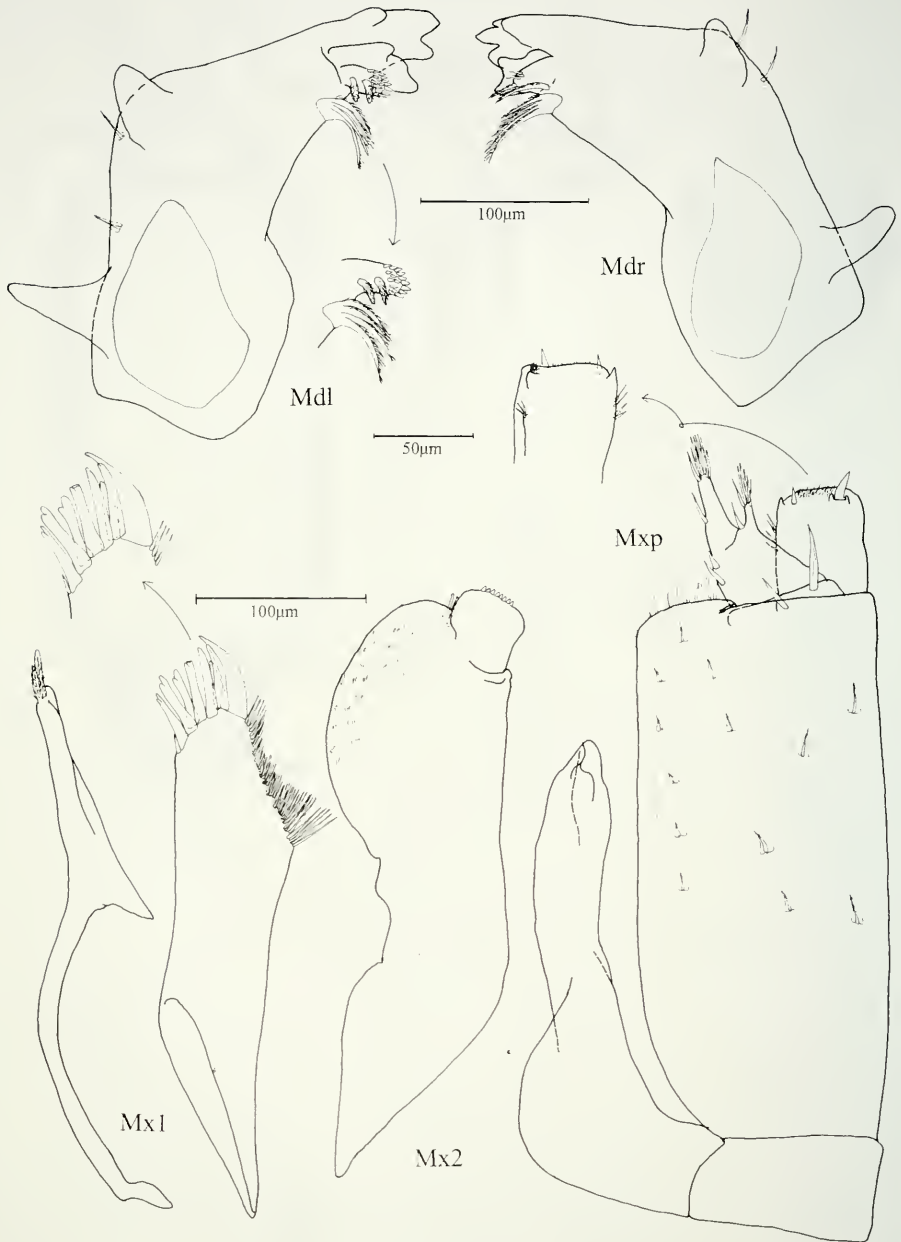


FIG. 13

Androdeloscia plicatipus sp. n. holotype ♂ 3mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

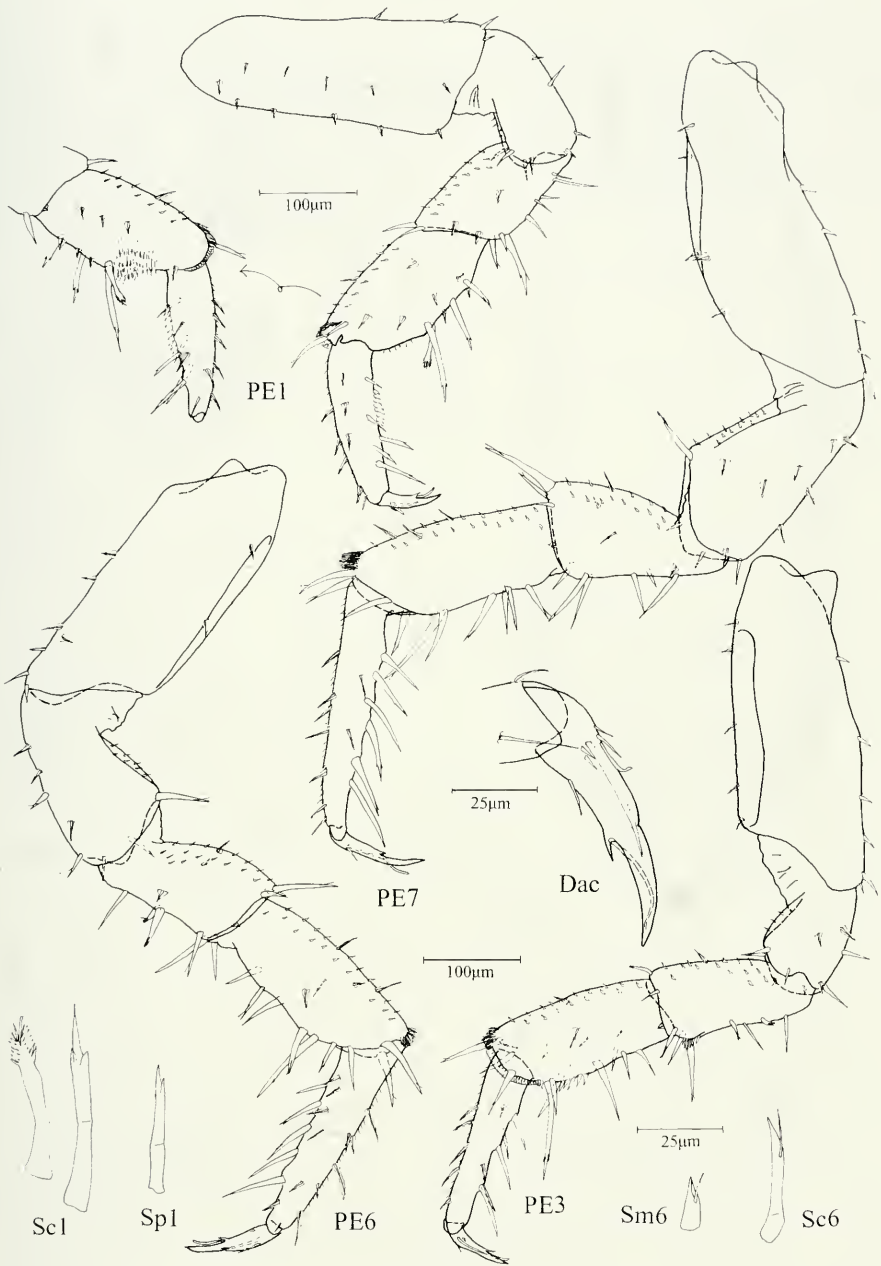


FIG. 14

Androdeloscia plicatipes sp. n. holotype ♂ 3mm. Dac dactylus 1 in rostral view; PE1-7 pereopods 1, 3, 6, 7 (caudal view), with detail of carpus 1 in rostral view; Sc1 ornamental sensory spine of carpus 1; Sc6 sensory spine of carpus 6; Sm6 sensory spine of merus 6; Sp1 distal sensory spine of propus 1.

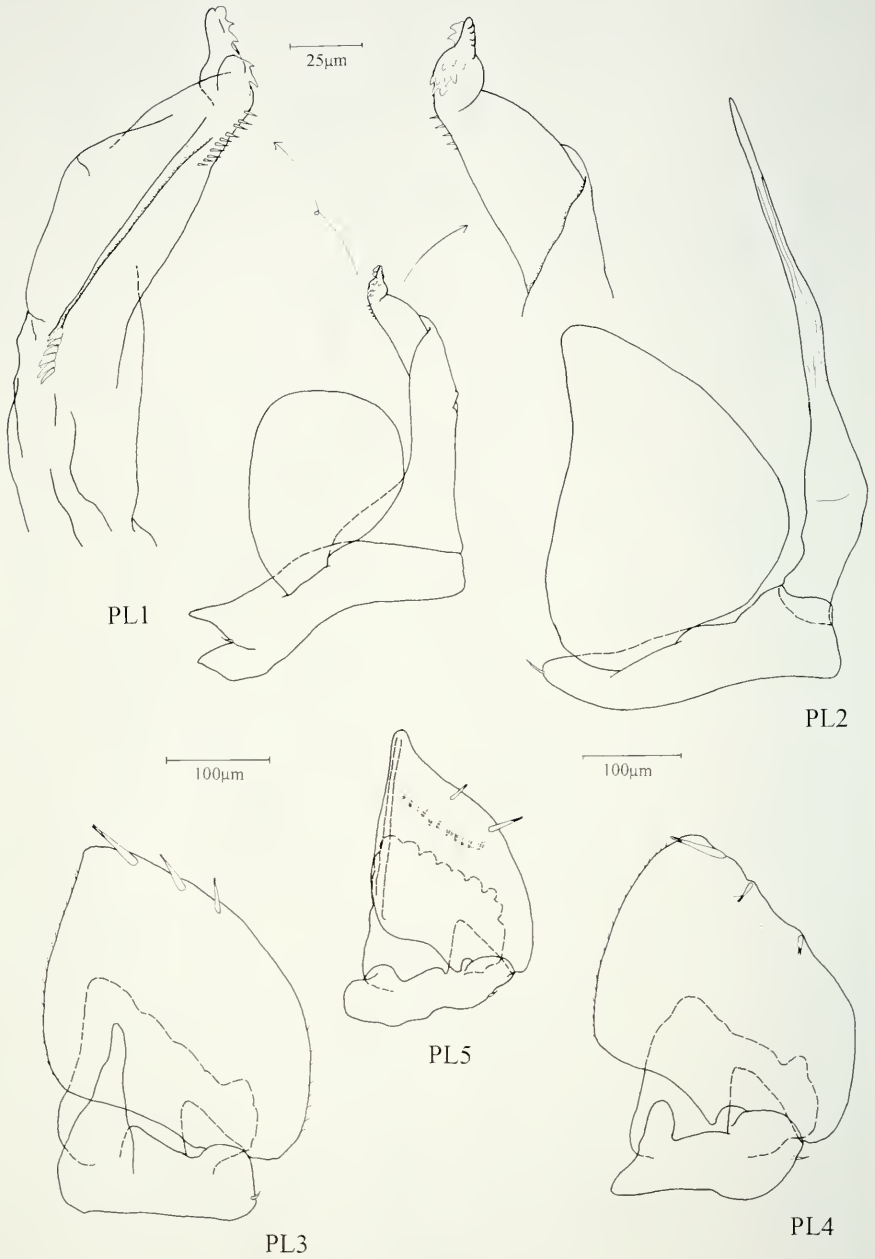


FIG. 15

Androdeloscia plicatipus sp. n. holotype ♂ 3mm. PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and rostral view.

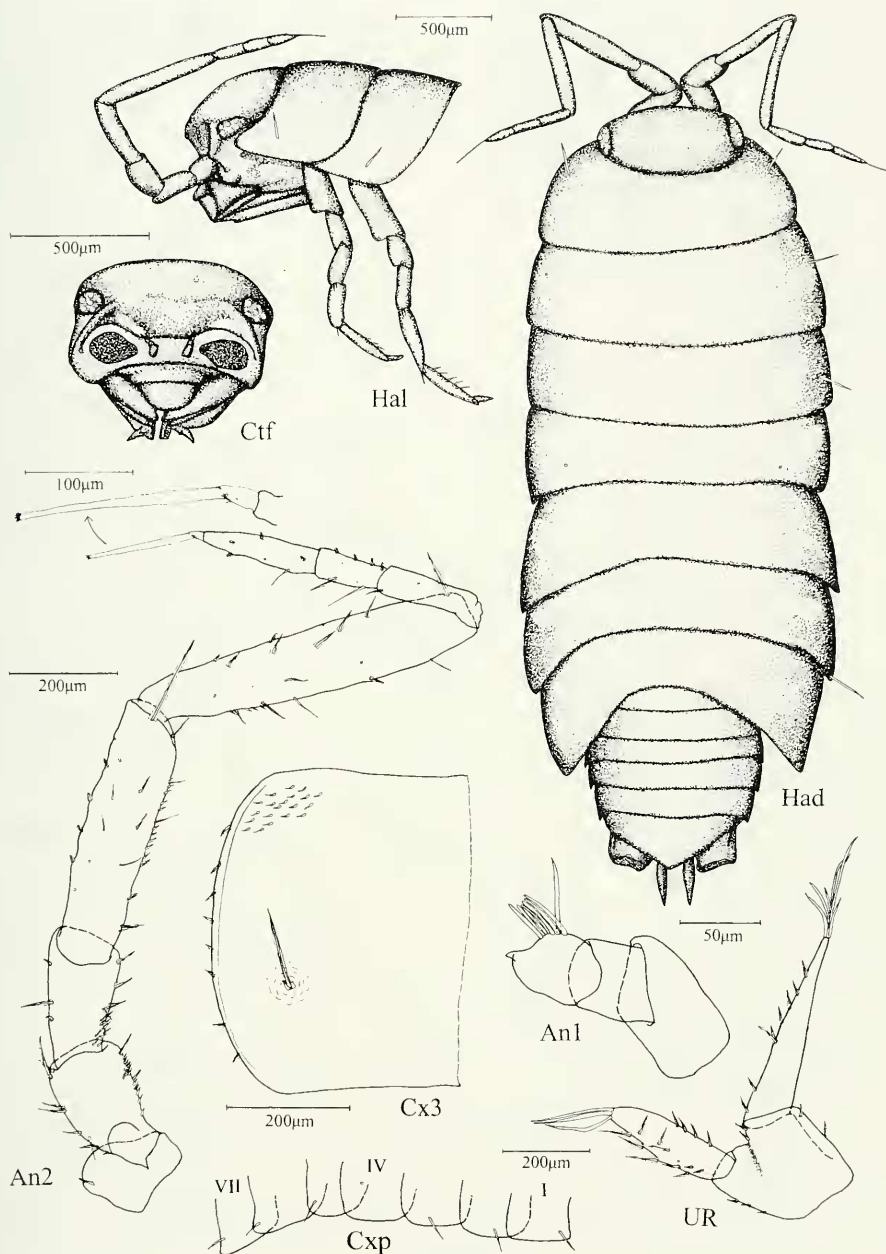


FIG. 16

Androdeloscia taitii sp. n. holotype ♂ 4mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; UR uropod.

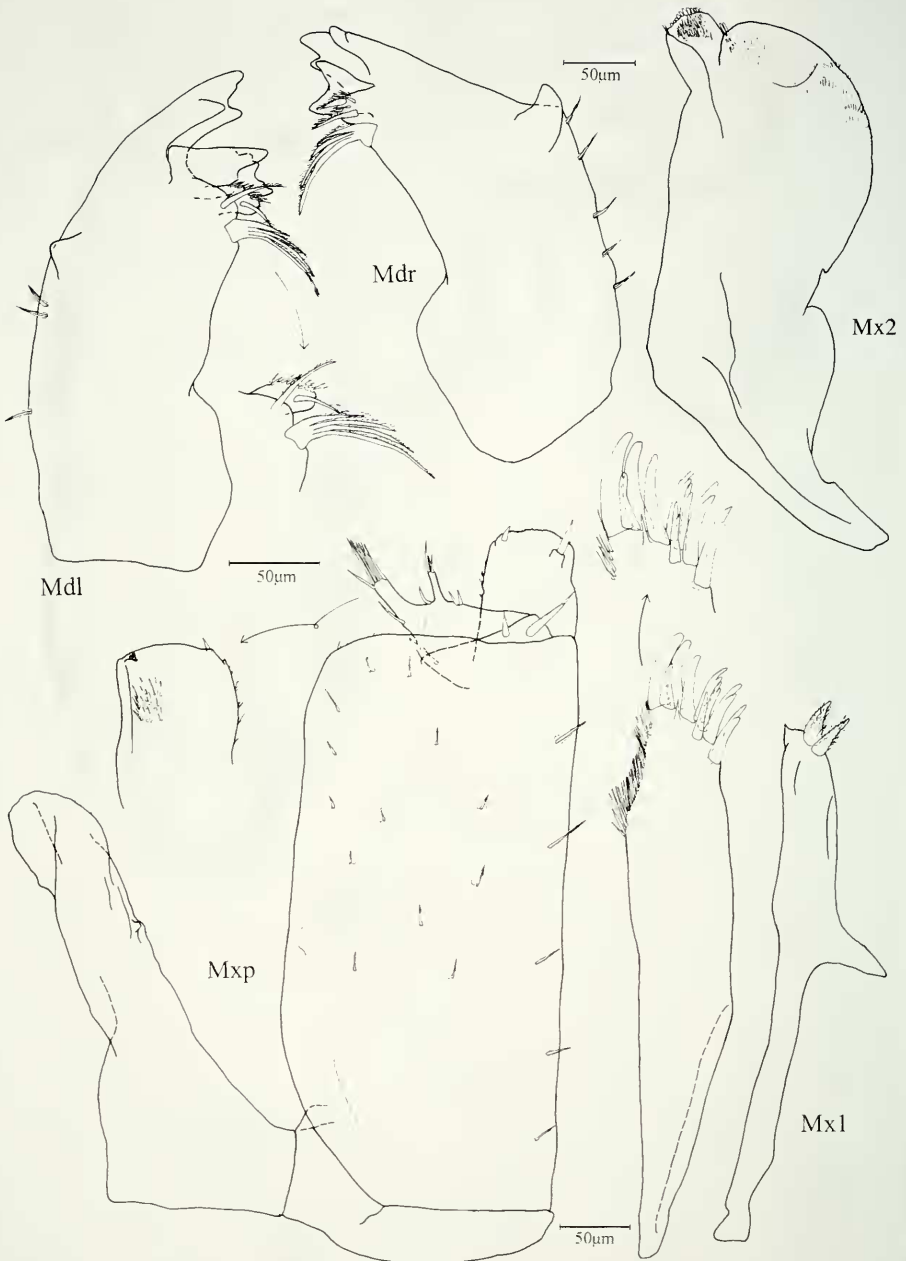


FIG. 17

Androdeloscia taitii sp. n. holotype ♂ 4mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

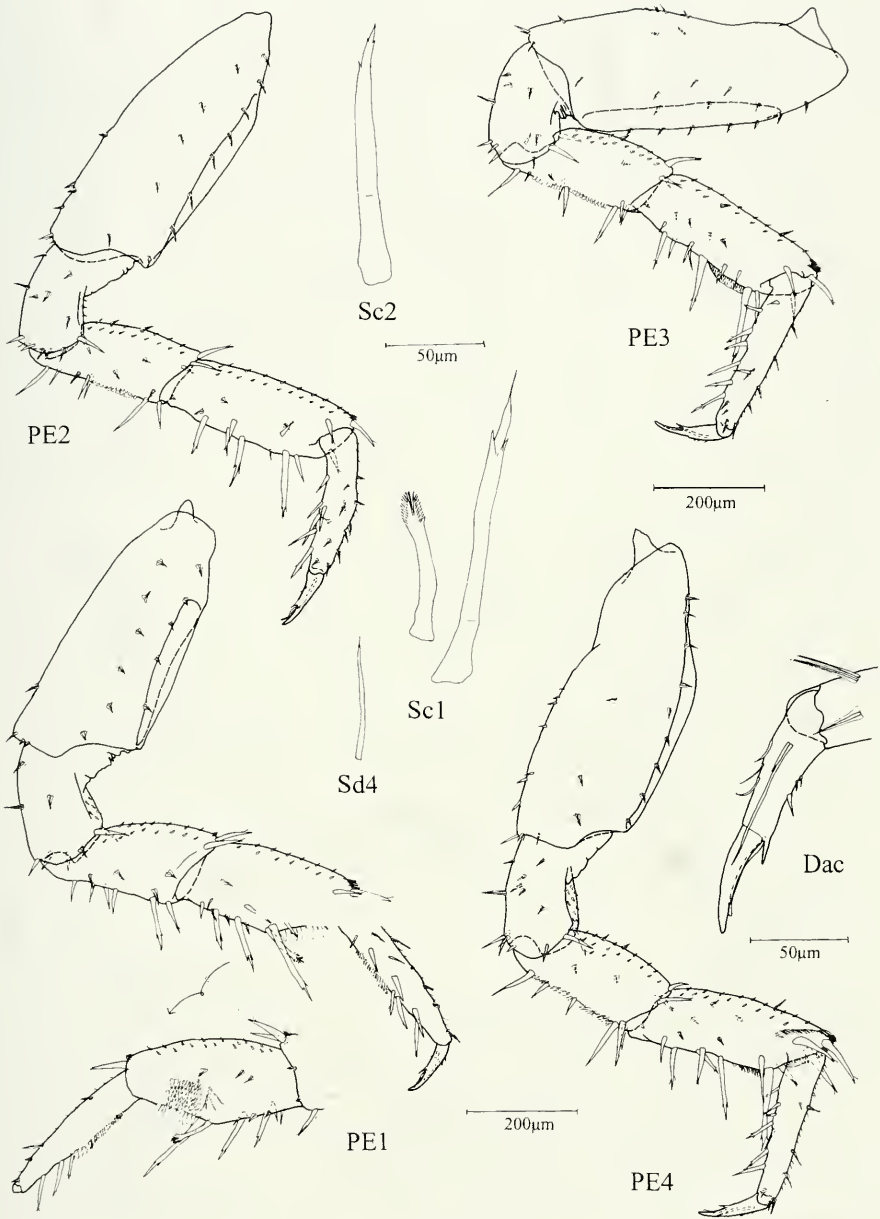


FIG. 18

Androdeloscia taitii sp. n. holotype ♂ 3.5mm. Dac dactylus 4 in rostral view; PE1-4 pereopods 1-4 (caudal view), with detail of carpus 1 in rostral view; Sc1 ornamental and longest sensory spine of carpus 1; Sc2 sensory spine of carpus 2; Sd4 dactylar seta of dactylus 4.

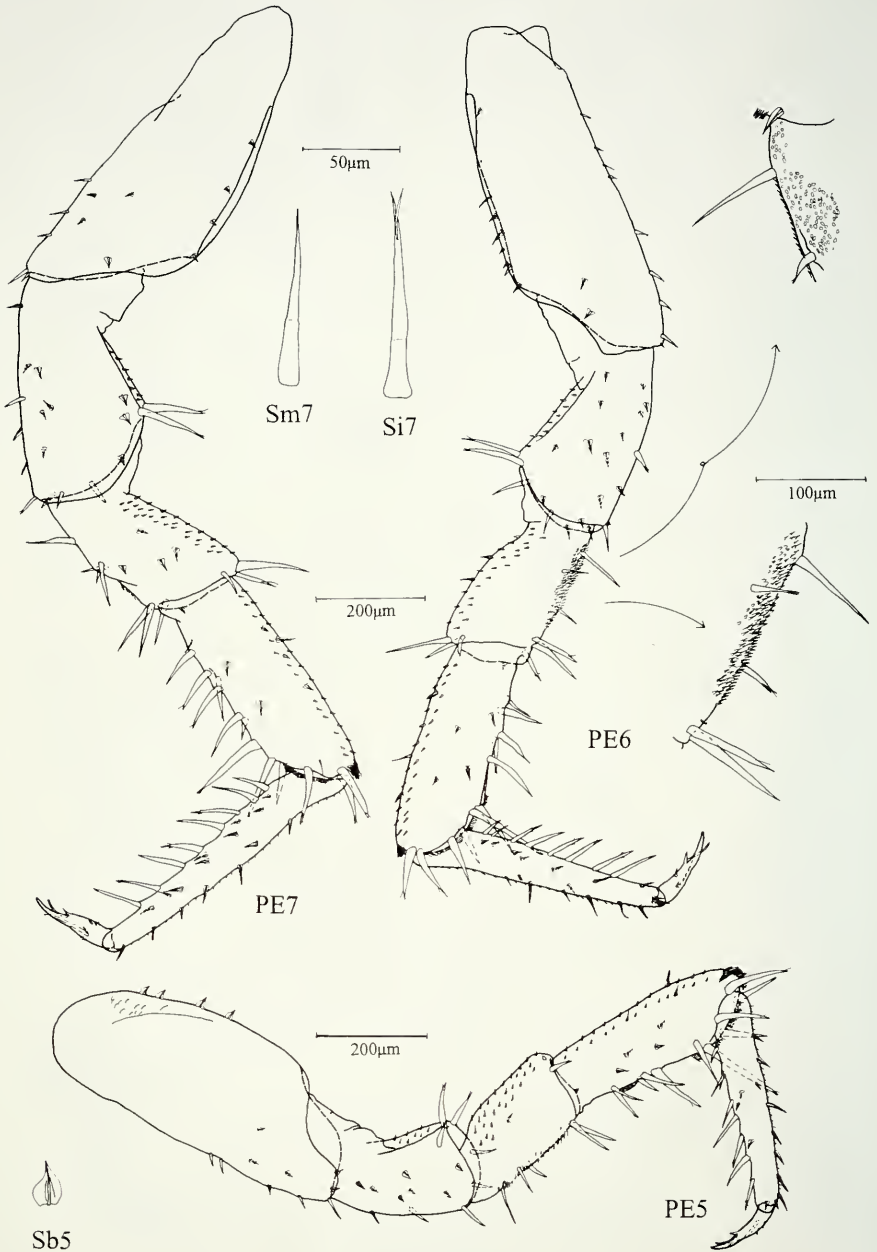


FIG. 19

Androdeloscia taitii sp. n. holotype ♂ 4mm. PE5-7 pereopods 5-7 (caudal view), with details of merus 6 in rostral and caudal view; Si7 lateral sensory spine of ischium 7; Sm7 sensory spine of merus 7; Sb5 tricorn-like seta of basis 5.

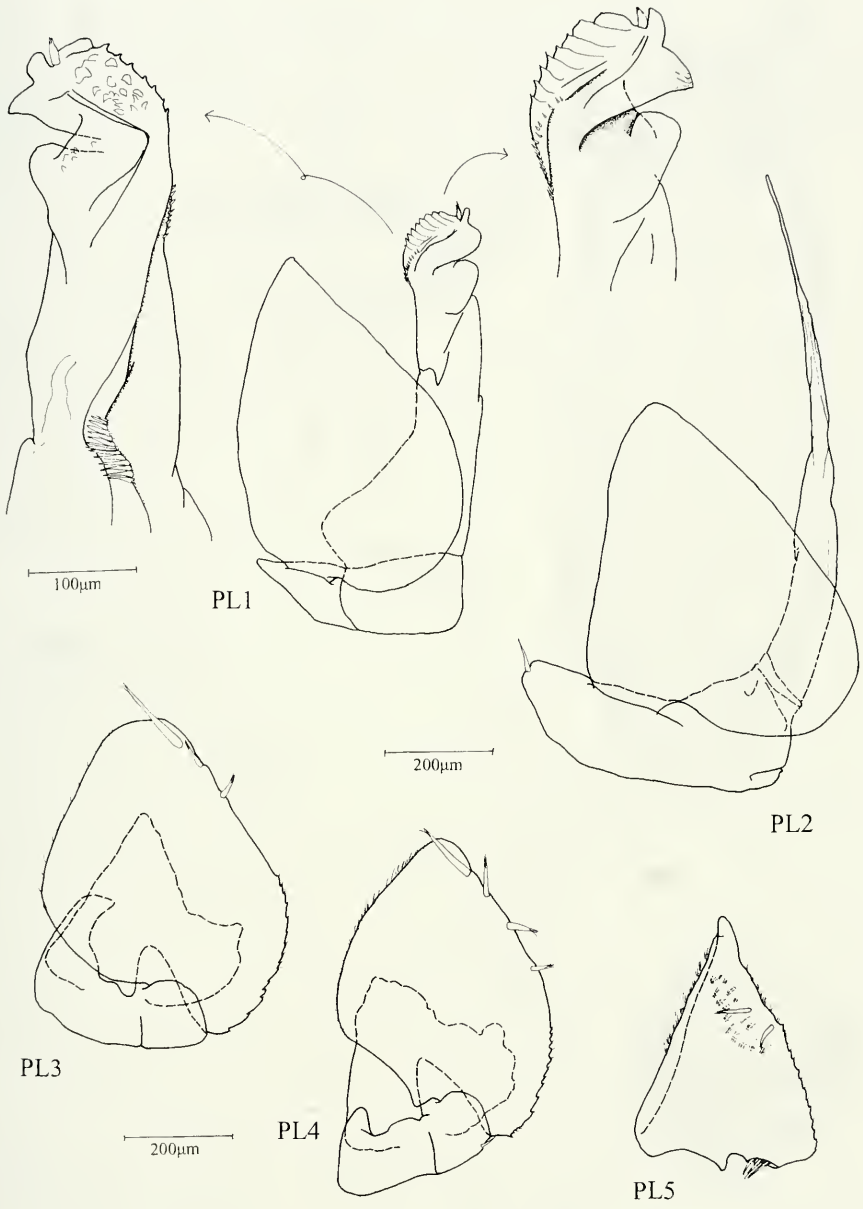


FIG. 20

Androdeloscia taitii sp. n. holotype ♂ 4mm. PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and rostral view.

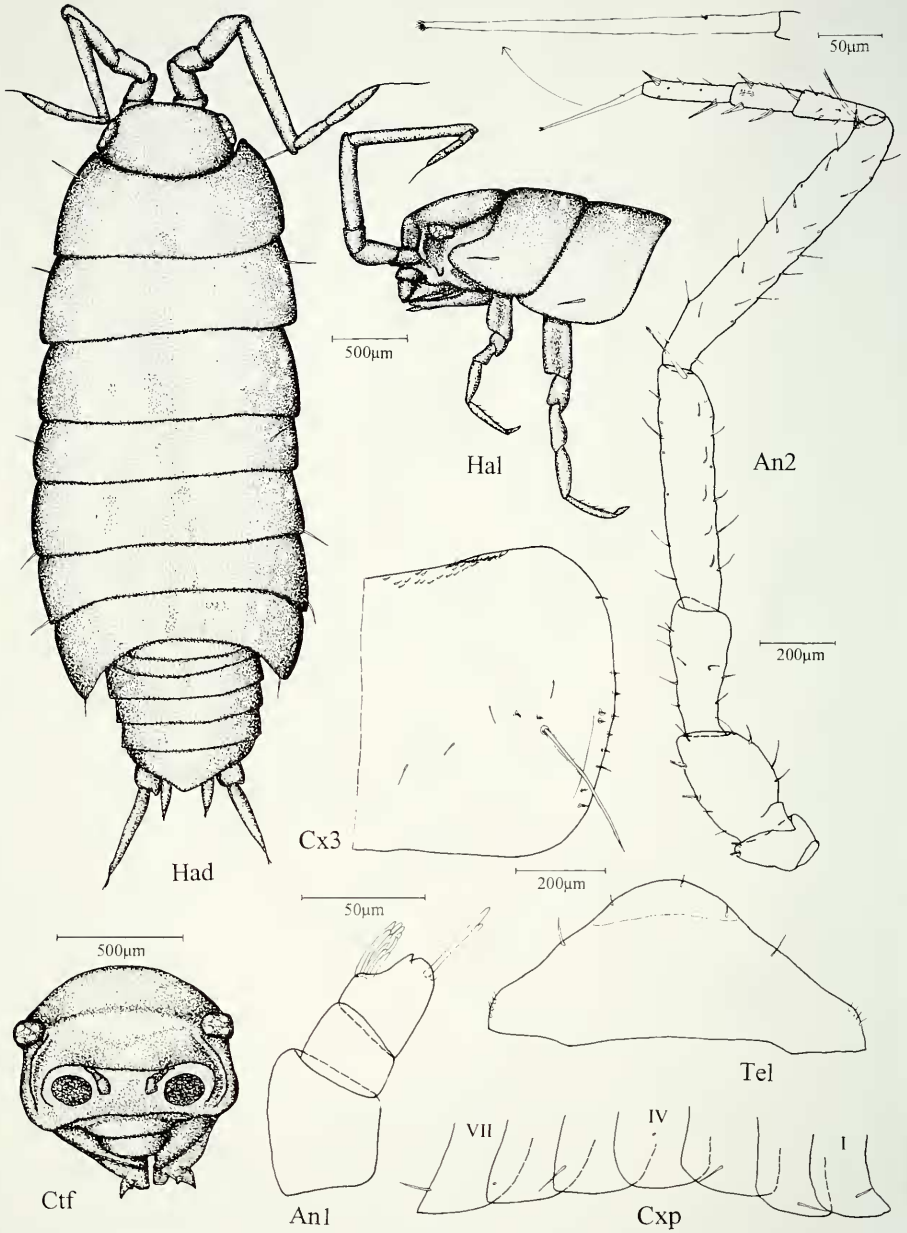


FIG. 21

Androdeloscia merolobata sp. n. holotype ♂ 5mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.



FIG. 22

Androdeloscia merolobata sp. n. holotype ♂ 5mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite in caudal and rostral view; Mx2 maxilla.

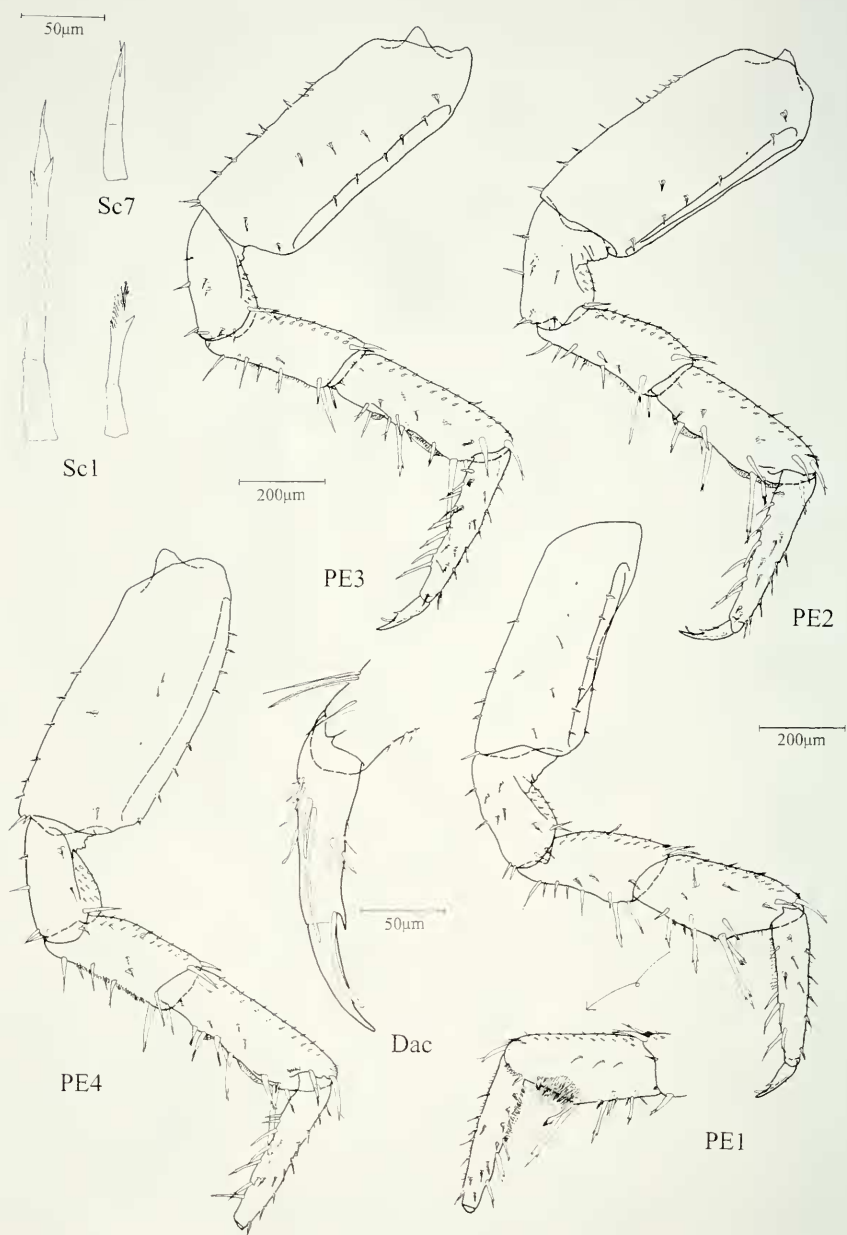


FIG. 23

Androdeloscia merolobata sp. n. holotype ♂ 5mm. Dac dactylus 4 in rostral view; PE1-4 pereopods 1-4 (caudal view), with detail of carpus 1 in rostral view; Sc1 ornamental and longest sensory spine of carpus 1; Sc7 sensory spine of carpus 7.

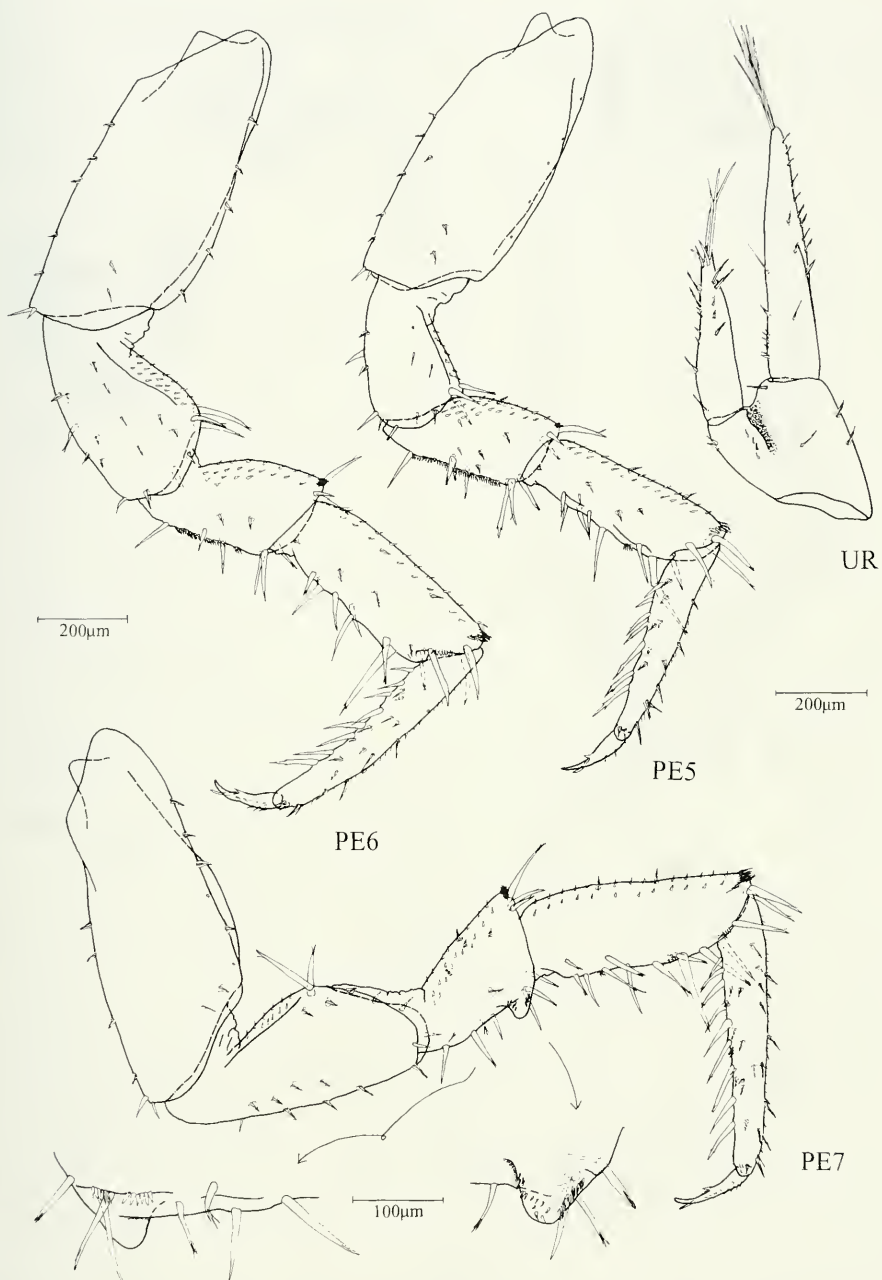


FIG. 24

Androdeloscia merolobata sp. n. holotype ♂ 5mm. PE5-7 pereopods 5-7 (caudal view), with details of lobes on merus 7 in rostral and caudal view; UR uropod.

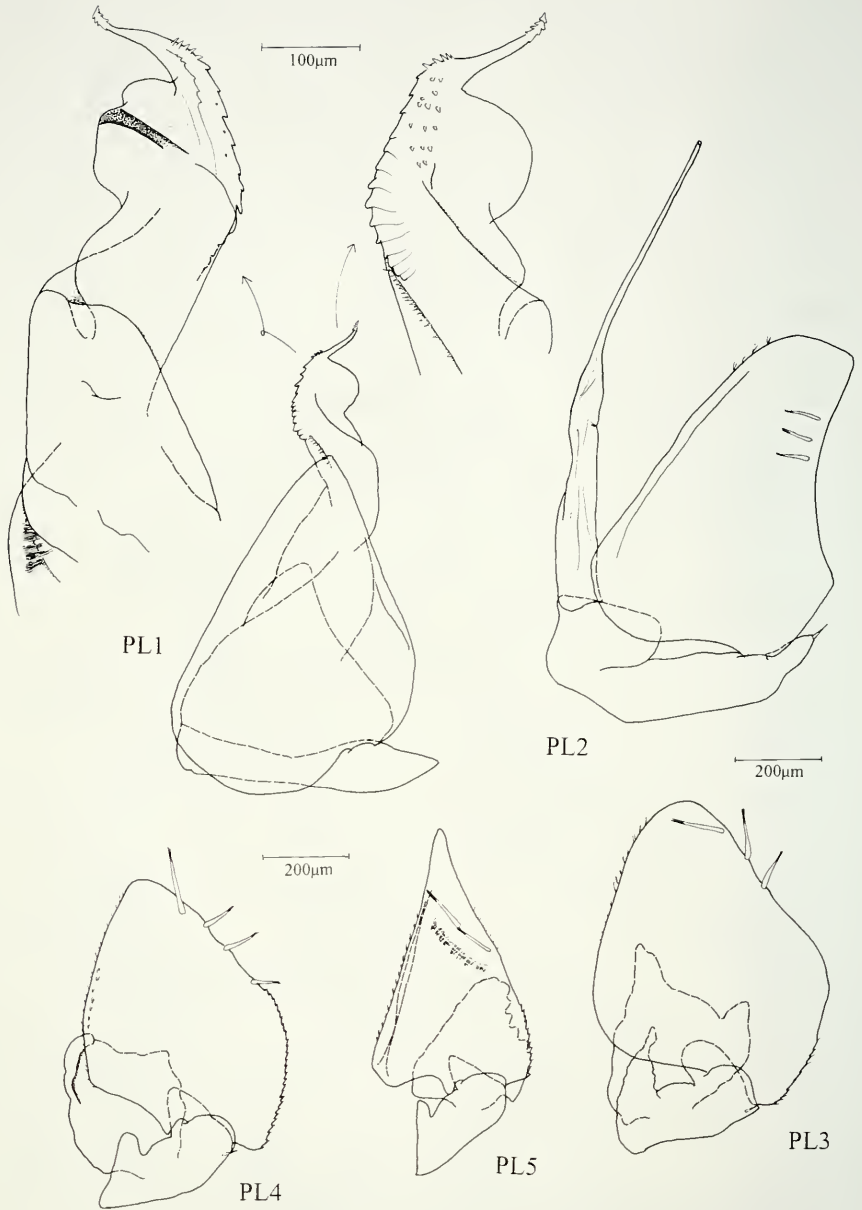


FIG. 25

Androdeloscia merolobata sp. n. holotype ♂ 5mm. PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and rostral view.

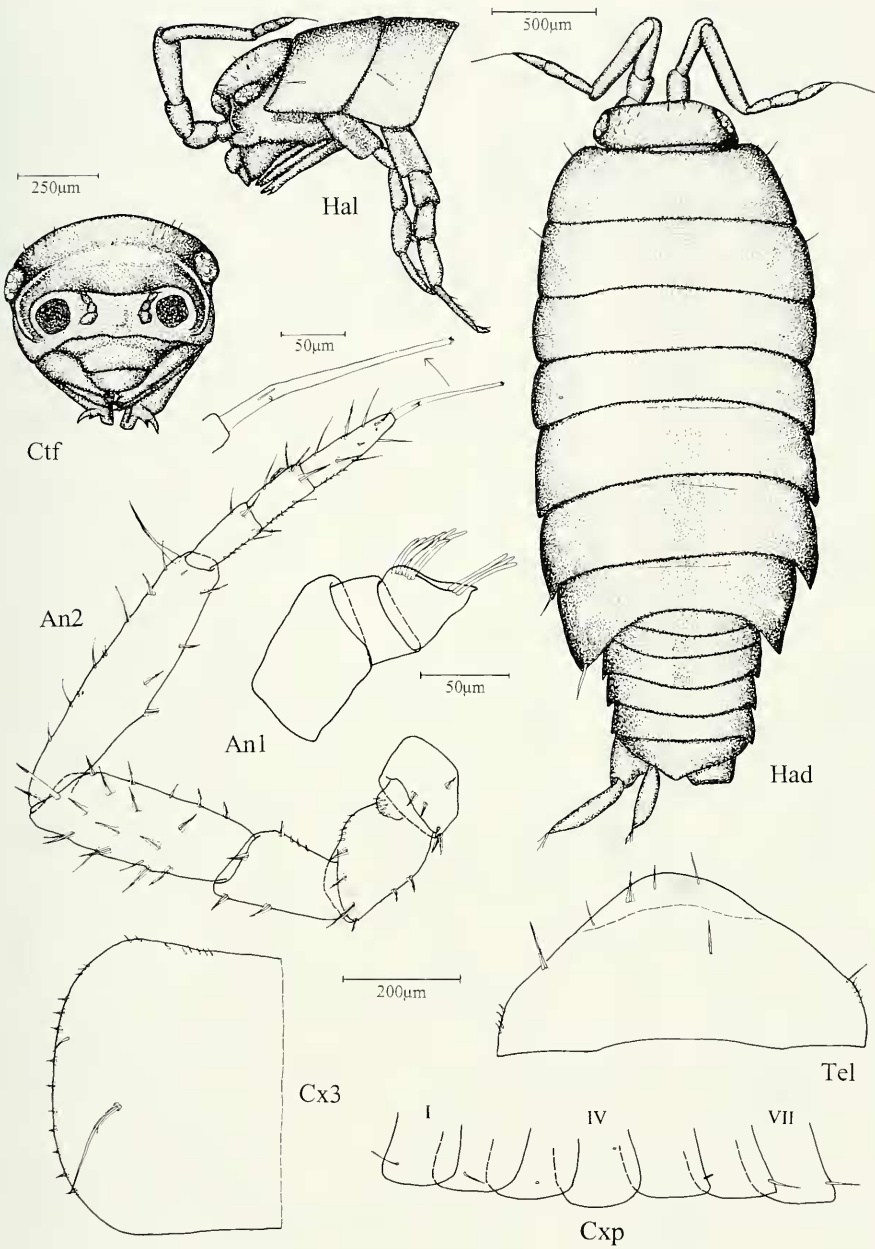


FIG. 26

Androdeloscia longiunguis sp. n. holotype ♂ 4mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view.

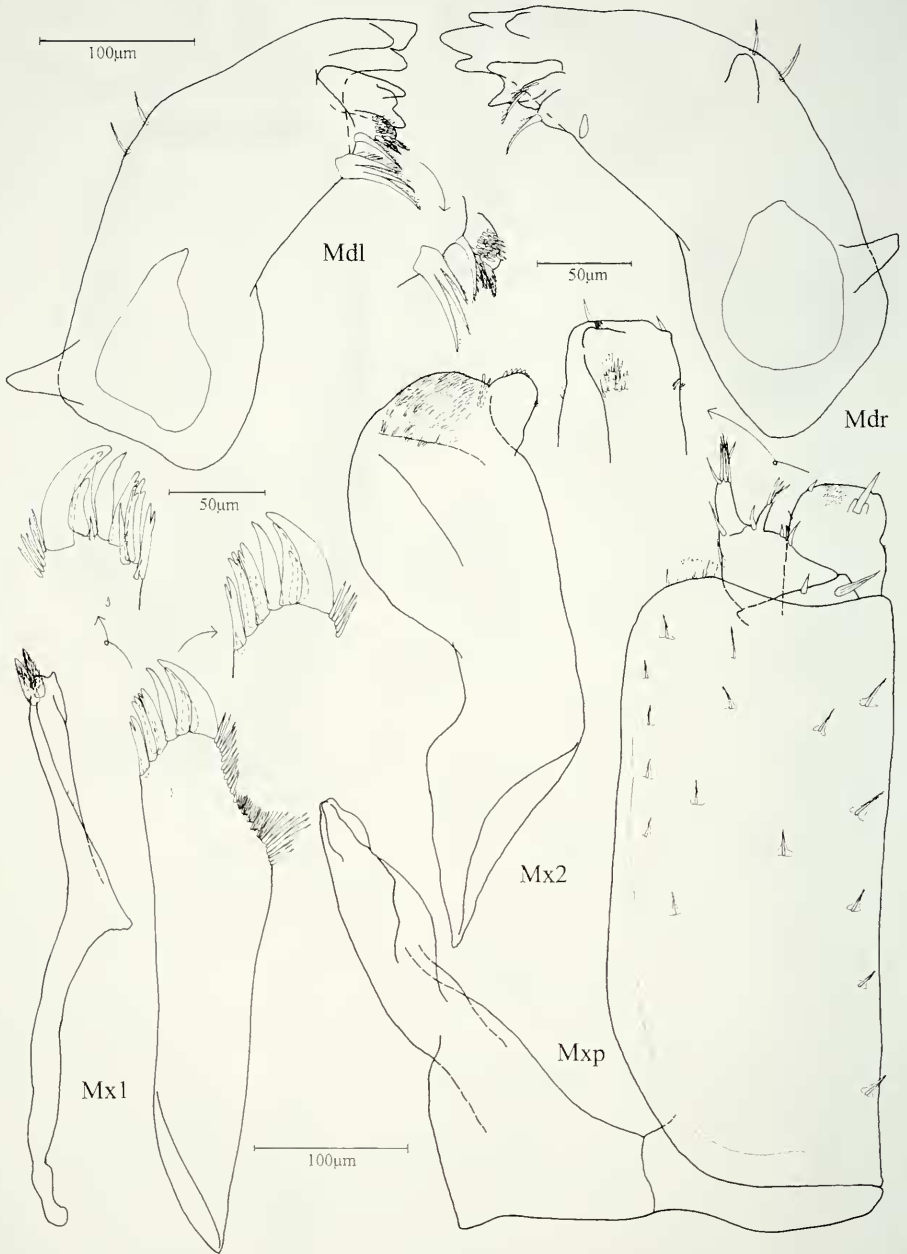


FIG. 27

Androdeloscia longiunguis sp. n. holotype ♂ 4mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite in caudal and rostral view; Mx2 maxillula.

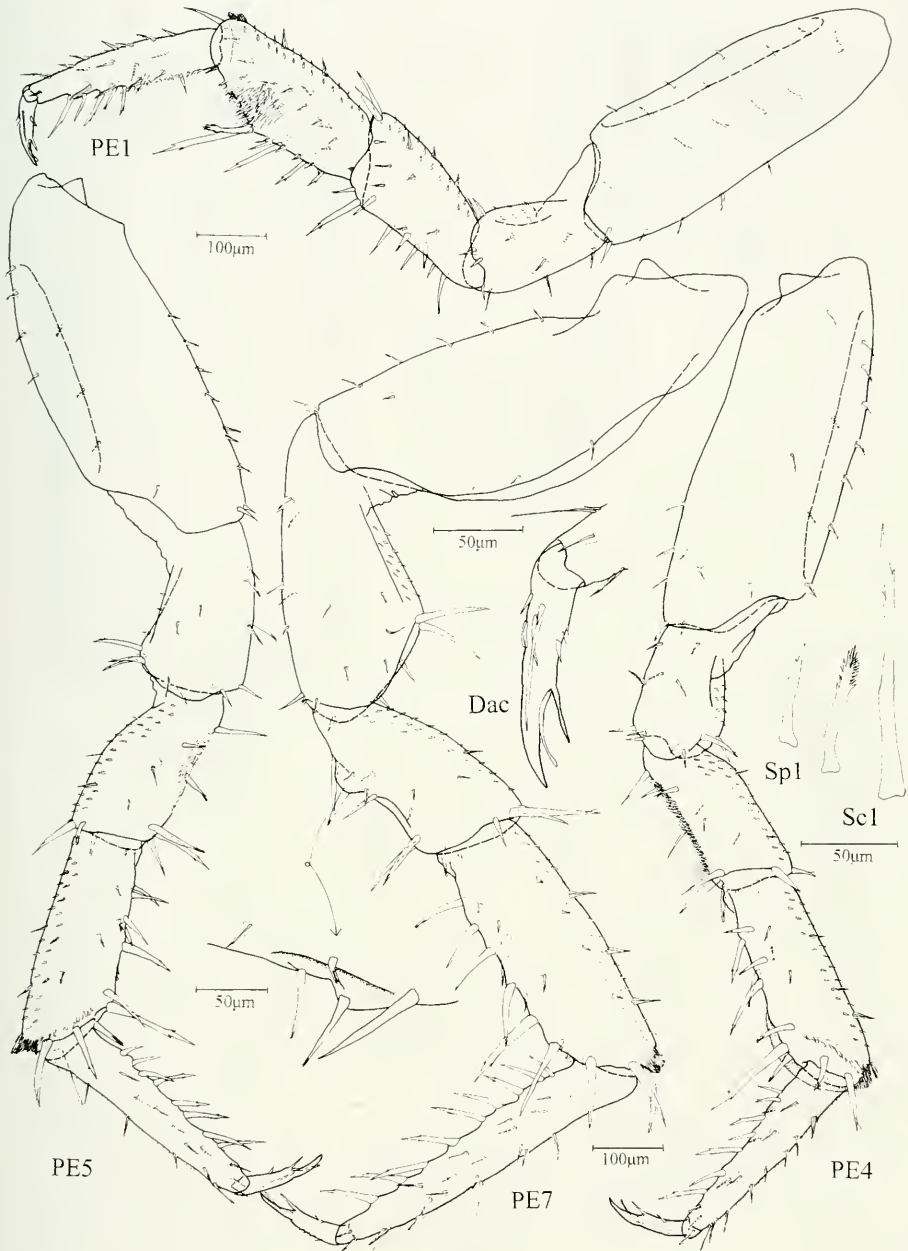


FIG. 28

Androdeloscia longiunguis sp. n. holotype ♂ 4mm. Dac dactylus 4 in rostral view; PE1-7 pereopods 1(rostral view), 4, 5, 7 (caudal view), with detail of merus 7 in rostral view; Scl ornamental and longest sensory spine of carpus 1; Sp1 distal sensory spine of propus 1.

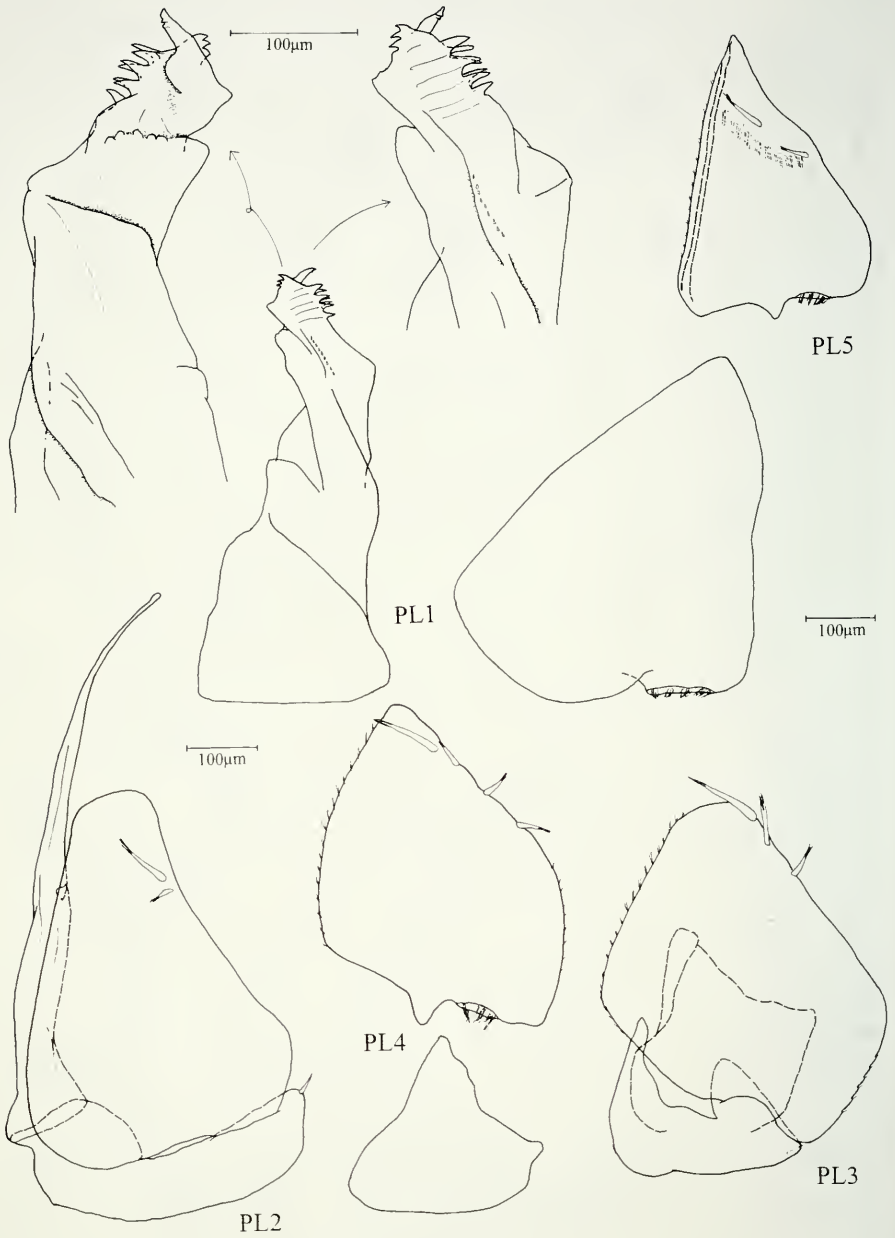


FIG. 29

Androdeloscia longiunguis sp. n. holotype ♂ 4mm. PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and rostral view.

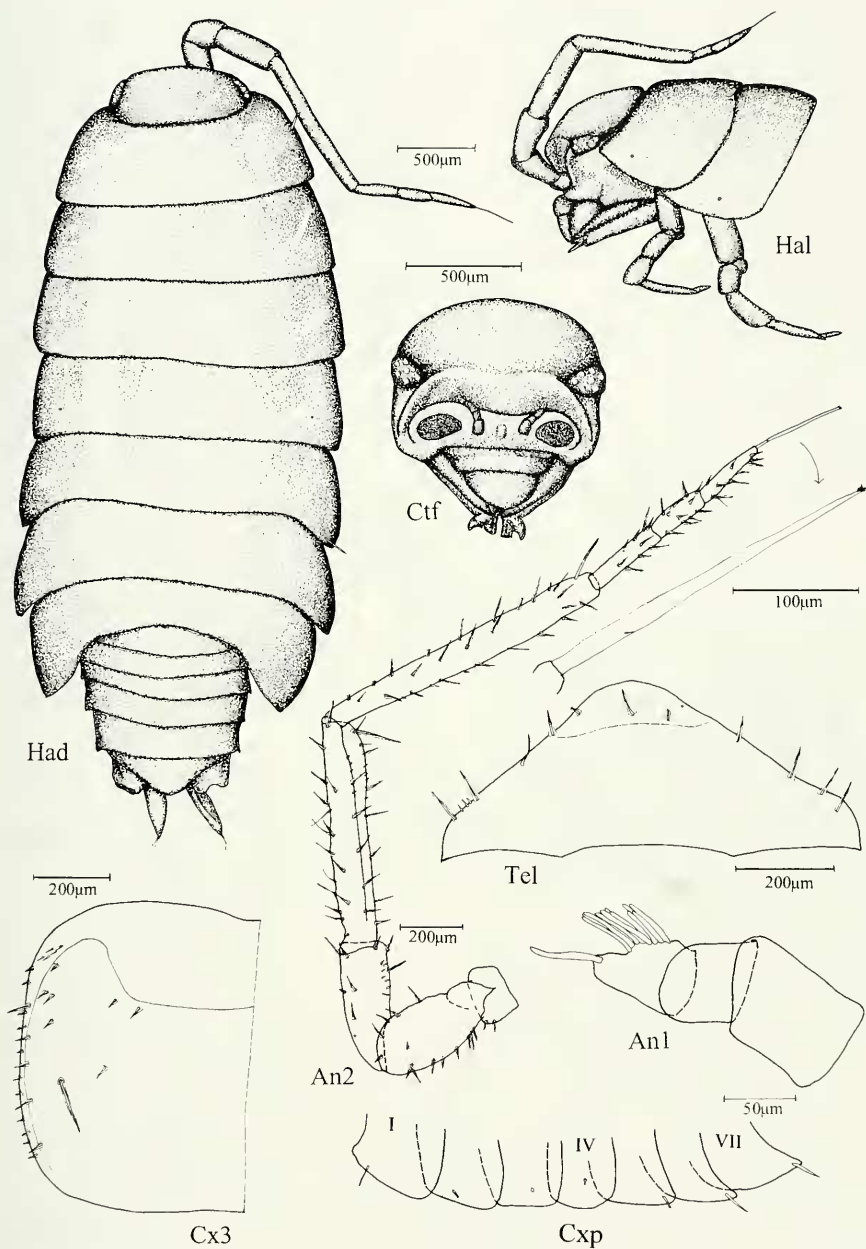


FIG. 30

Androdeloscia ferrarai sp. n. holotype ♂ 5mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

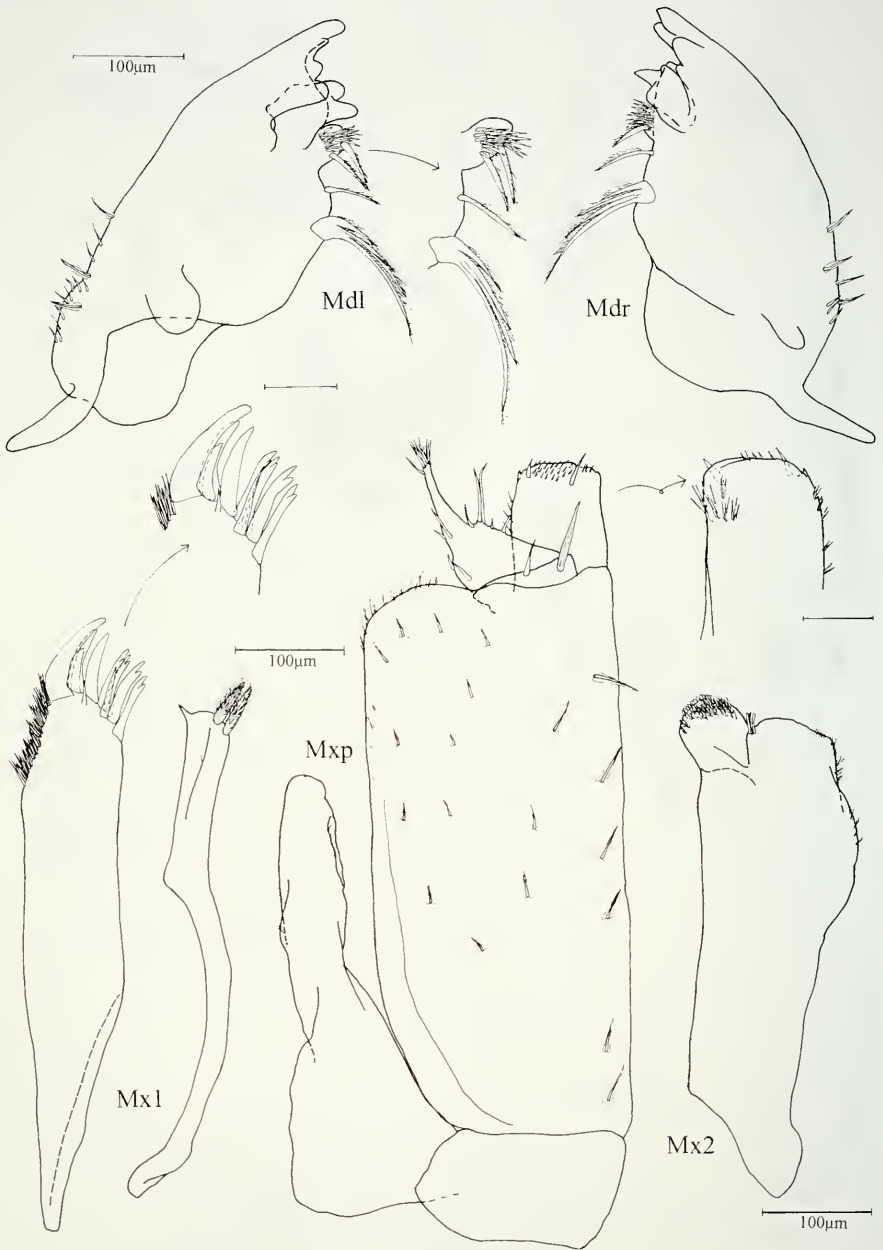


FIG. 31

Androdeloscia ferrarai sp. n. holotype ♂ 5mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

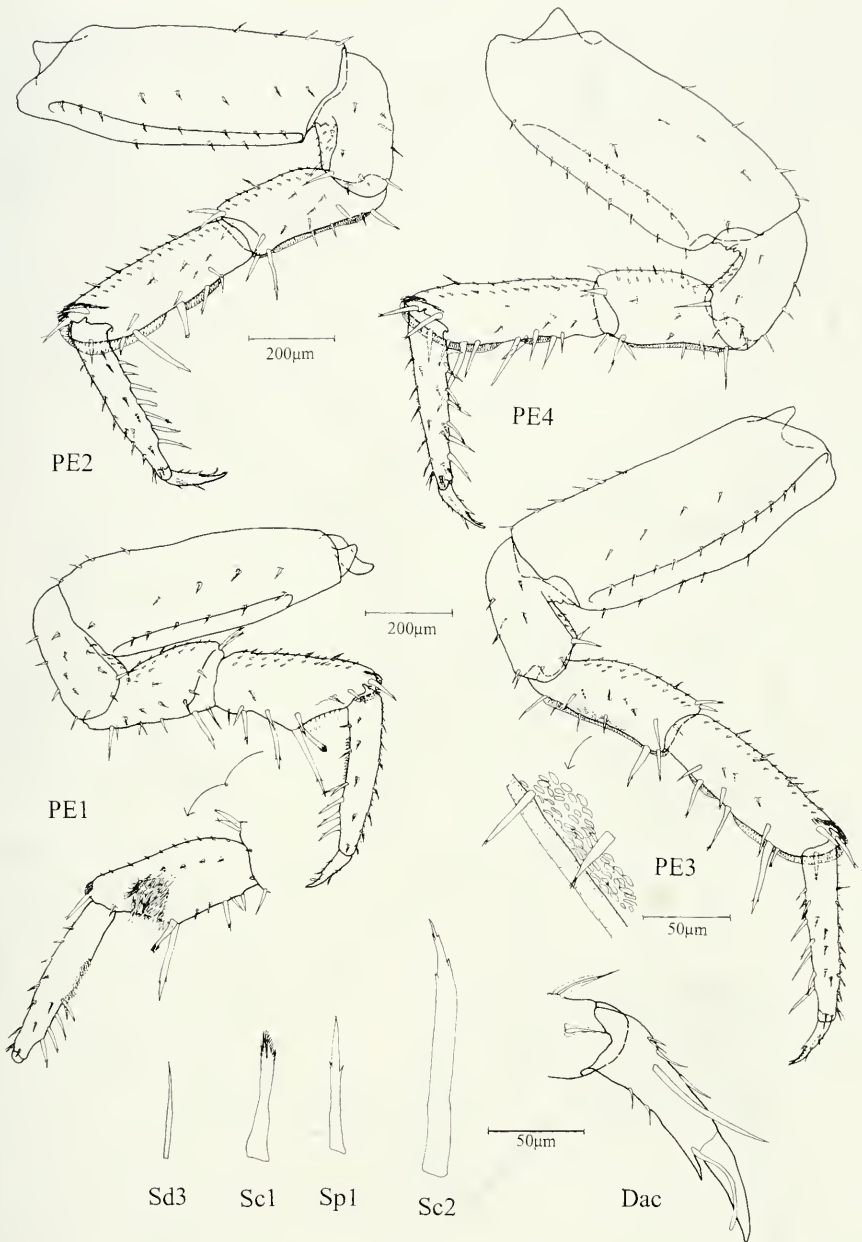


FIG. 32

Androdeloscia ferrarai sp. n. holotype ♂ 5mm. Dac dactylus 3 in rostral view; PE1-4 pereopods 1-4 (caudal view), with detail of carpus 1 in rostral view, and detail of merus 3; Sc1 ornamental and longest sensory spine of carpus 1; Sc2 sensory spine of carpus 2; Sd3 dactylar seta of dactylus 3; Sp1 distal sensory spine of propus 1.

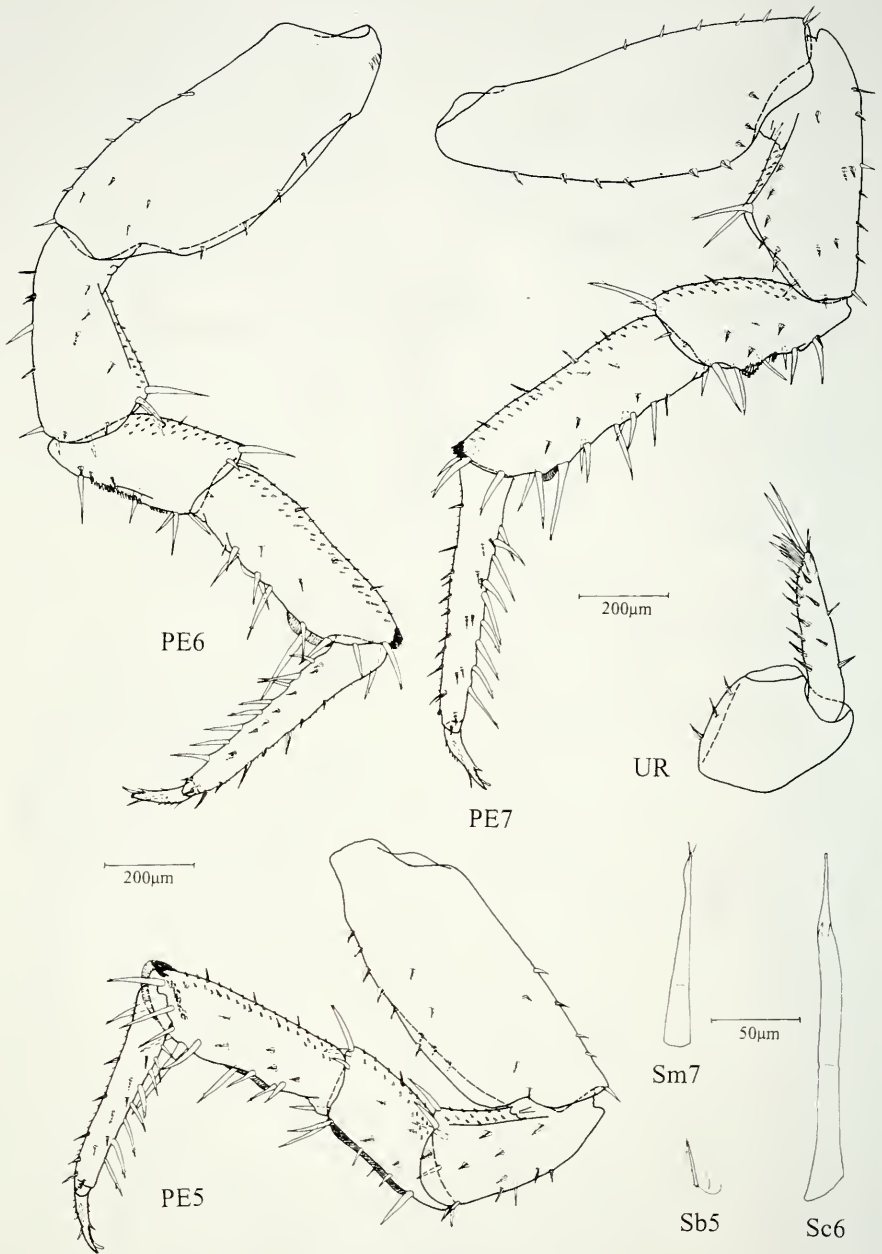


FIG. 33

Androdeloscia ferrarai sp. n. holotype ♂ 5mm. PE5-7 pereopods 5-7 (caudal view), with details of merus 6 in rostral and caudal view; Sb5 tricorn-like seta of basis 5; Sc6 lateral sensory spine of carpus 6; Sm7 sensory spine of merus 7; UR uropod.

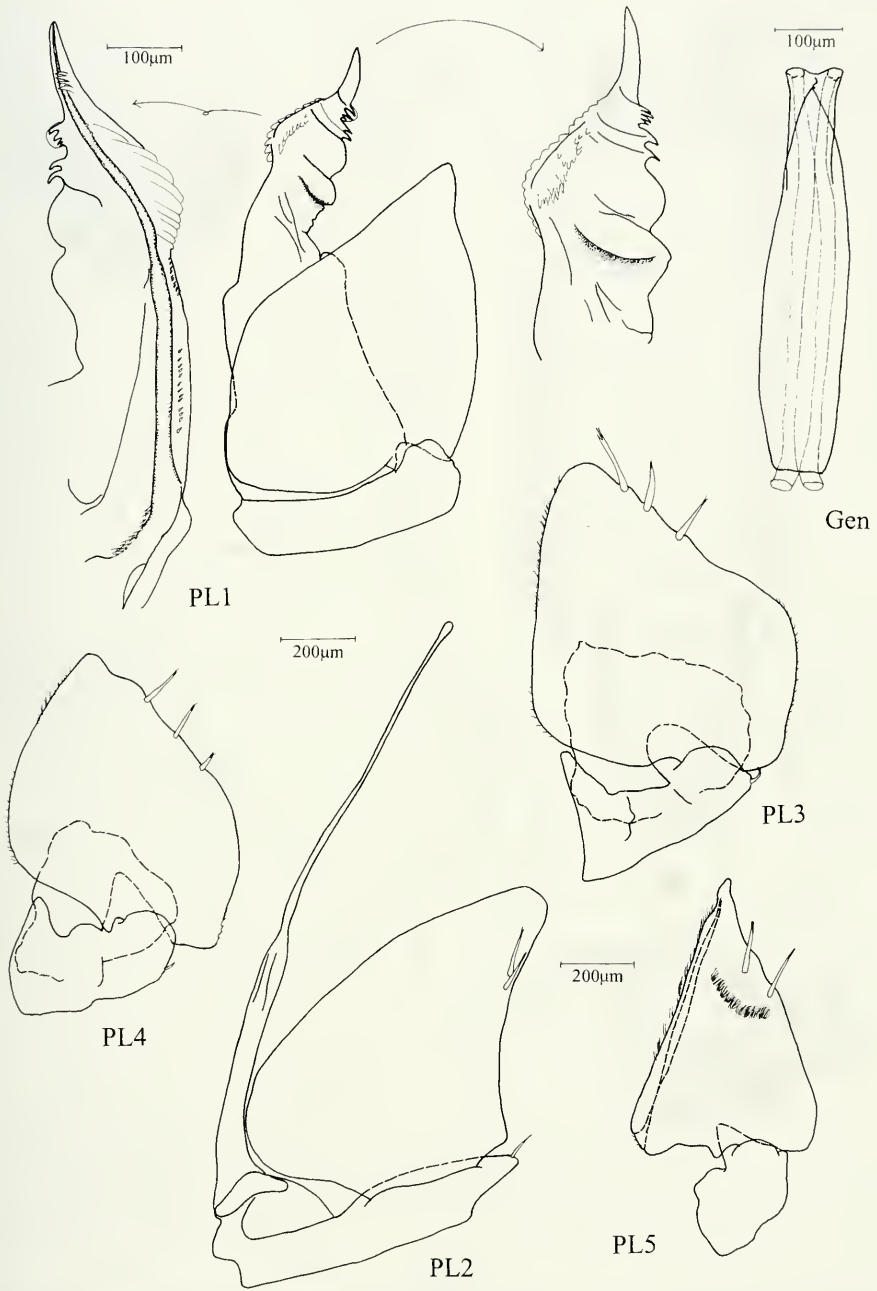


FIG. 34

Androdeloscia ferrarai sp. n. holotype ♂ 5mm. Gen genital papilla; PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and rostral view.

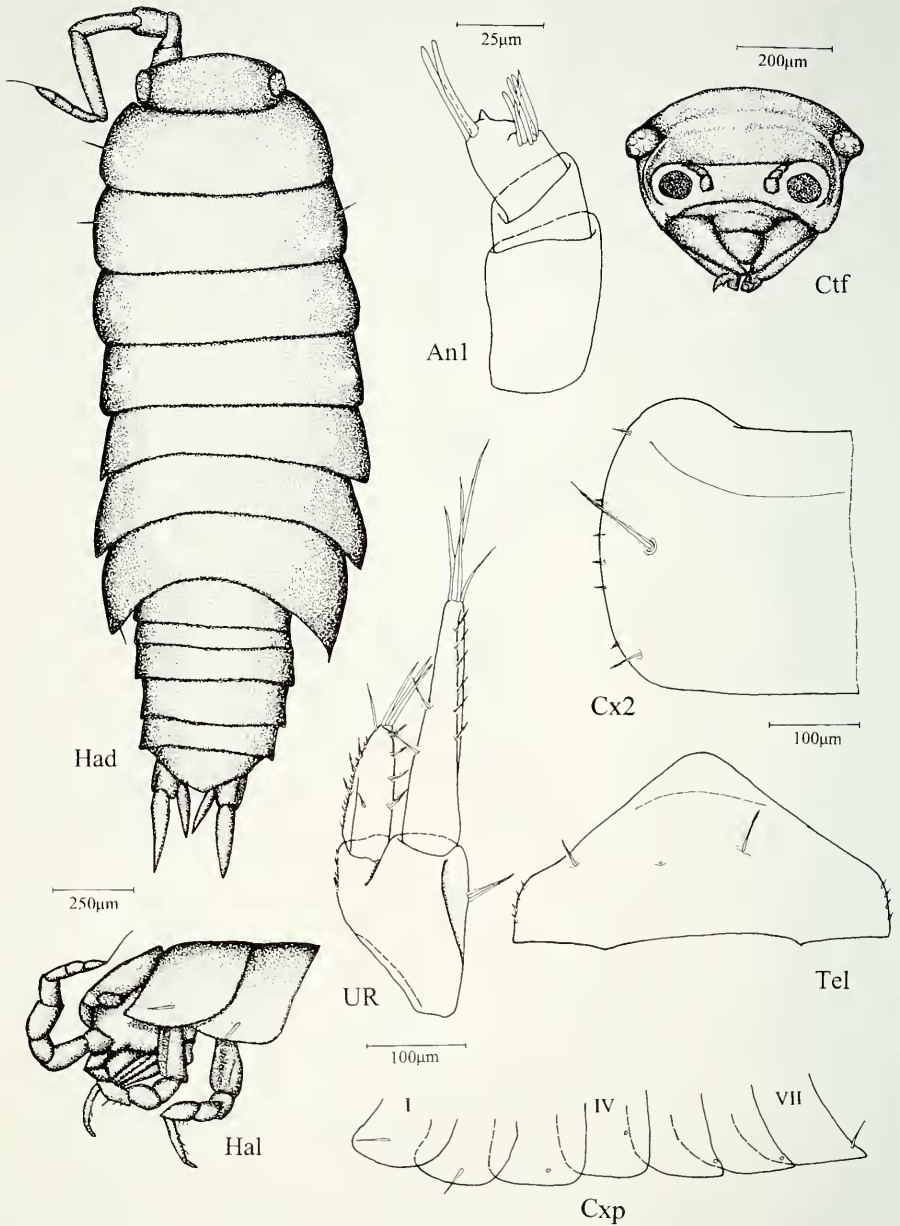


FIG. 35

Androdeloscia poeppigi sp. n. holotype ♂ 2.5mm. An1 antennula; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx2 coxal plate 2; Had habitus in dorsal view; Hal habitus in lateral view; UR uropod.

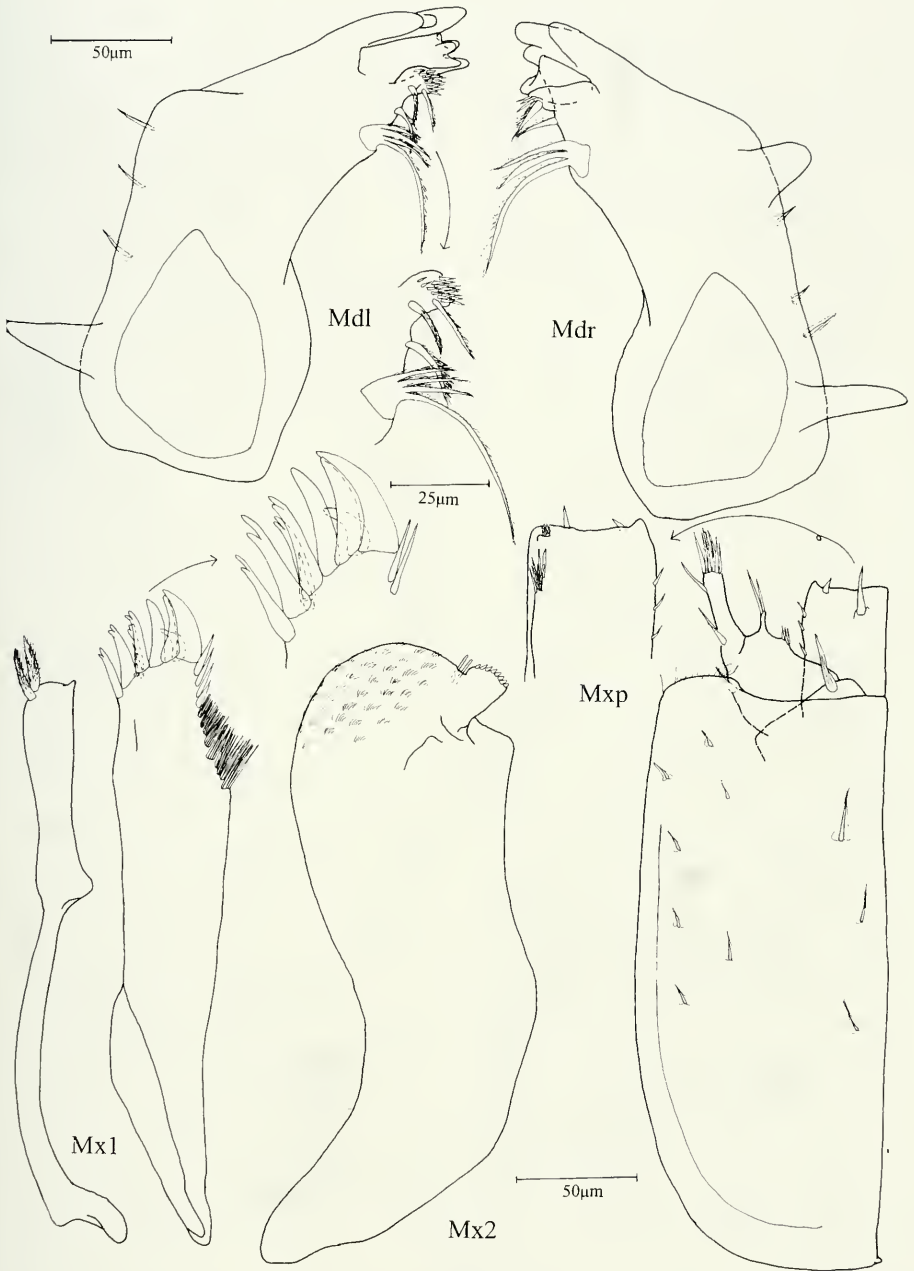


FIG. 36

Androdeloscia poeppigi sp. n. holotype ♂ 2.5mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite in caudal and rostral view; Mx2 maxillula.

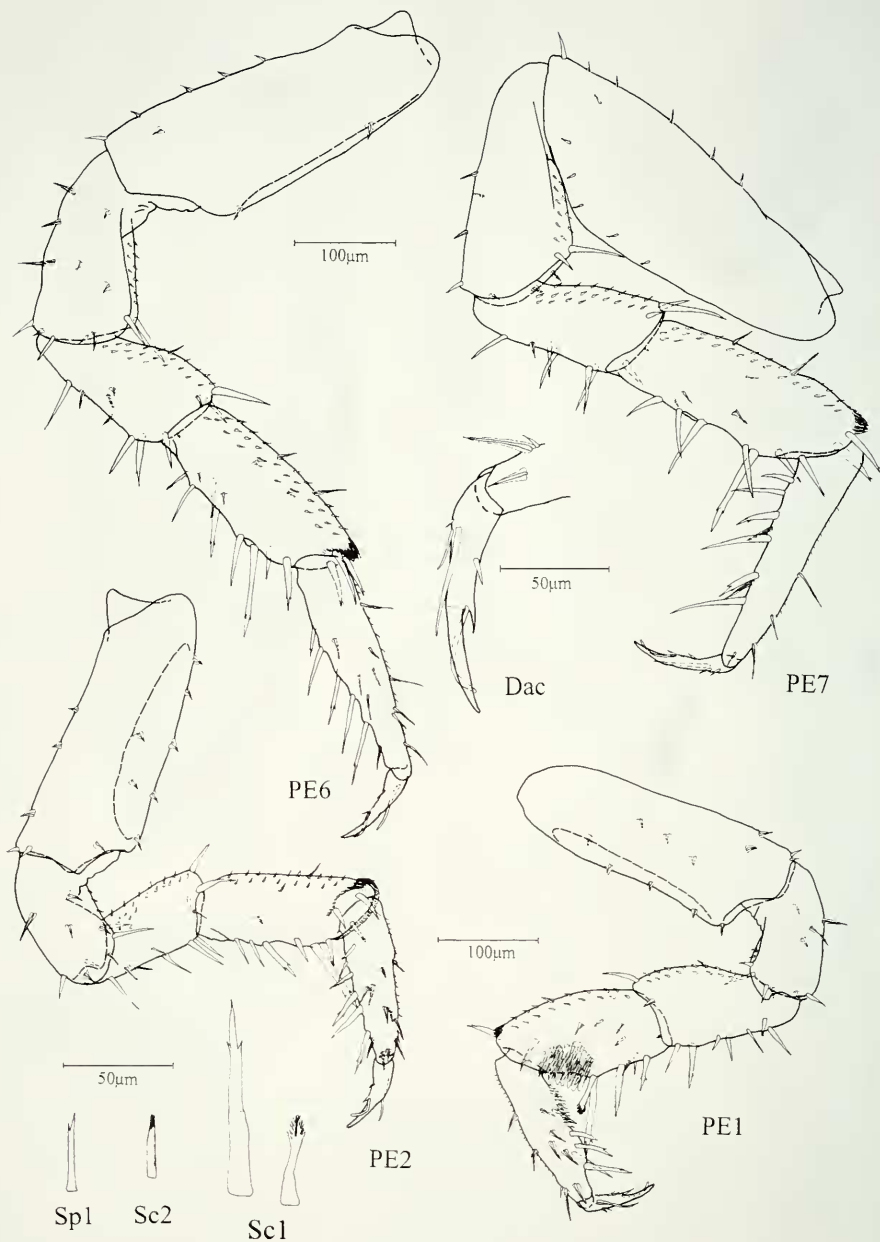


FIG. 37

Androdeloscia poeppigi sp. n. holotype ♂ 2.5mm. Dac dactylus 4 in rostral view; PE1-7 pereopods 1(rostral view), 2, 6, 7 (caudal view); Sc1 ornamental and longest sensory spine of carpus 1; Sc2 sensory spine of carpus 2; Sp1 distal sensory spine of propus 1.

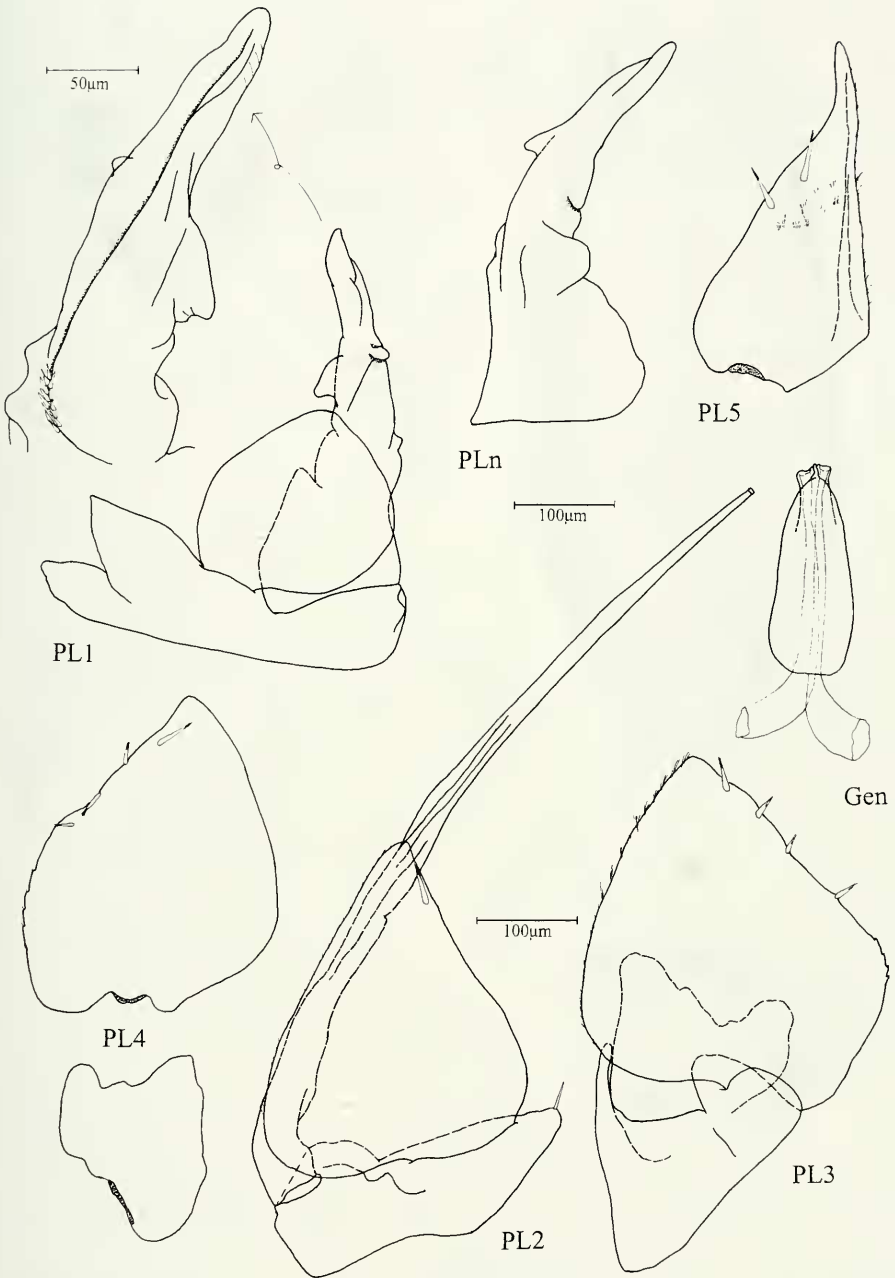


FIG. 38

Androdeloscia poeppigi sp. n. holotype ♂ 2.5mm. Gen genital papilla; PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and laterorostral view.

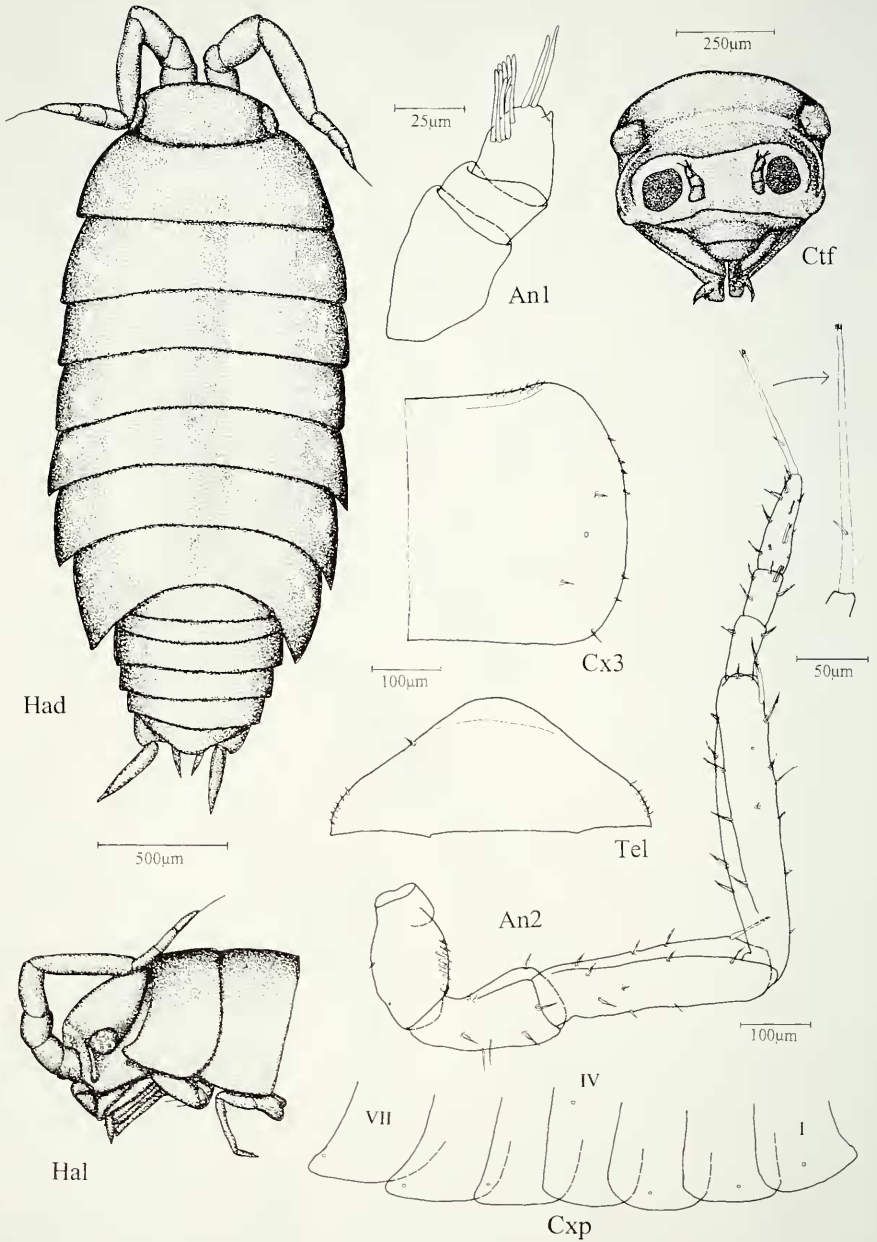


FIG. 39

Androdeloscia malleus sp. n. holotype ♂ 3mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

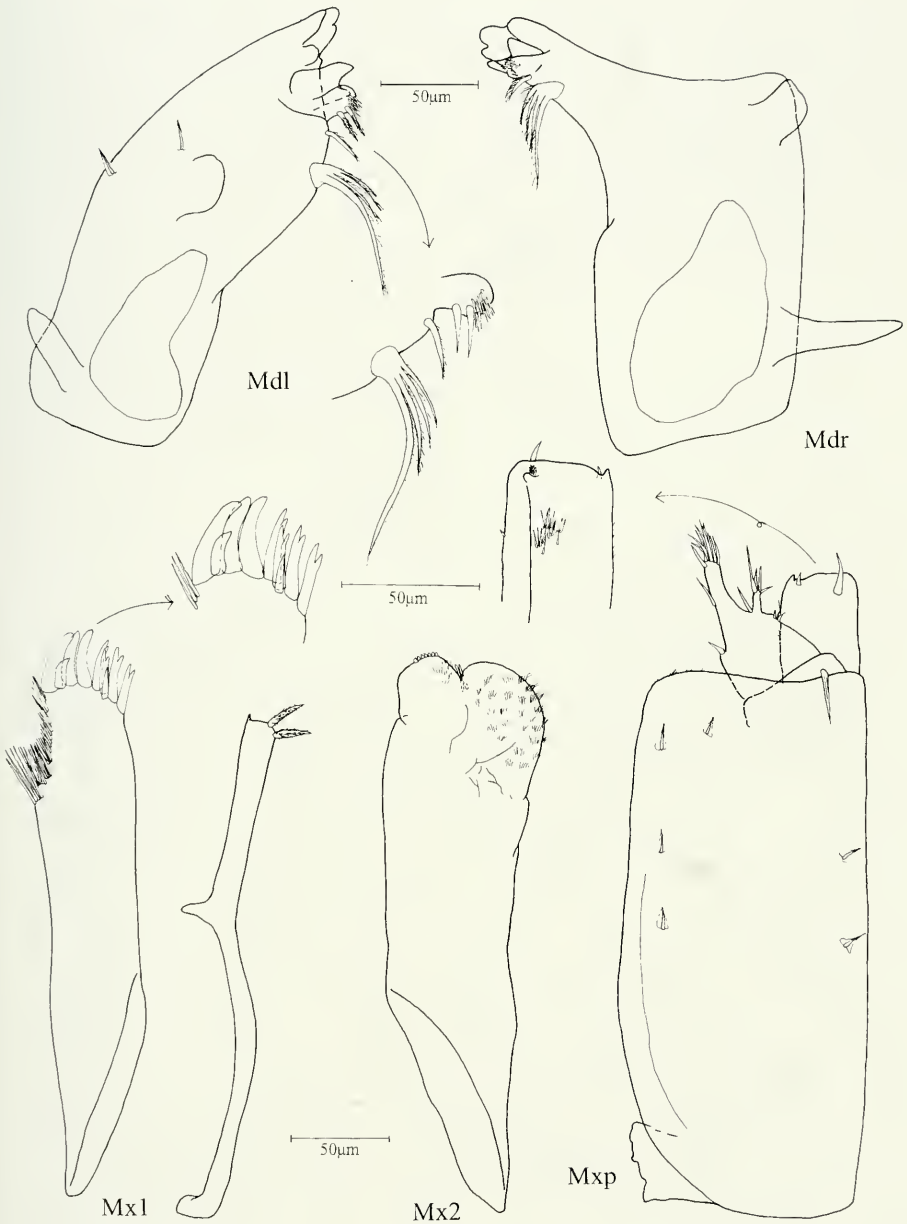


FIG. 40

Androdeloscia malleus sp. n. holotype ♂ 3mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

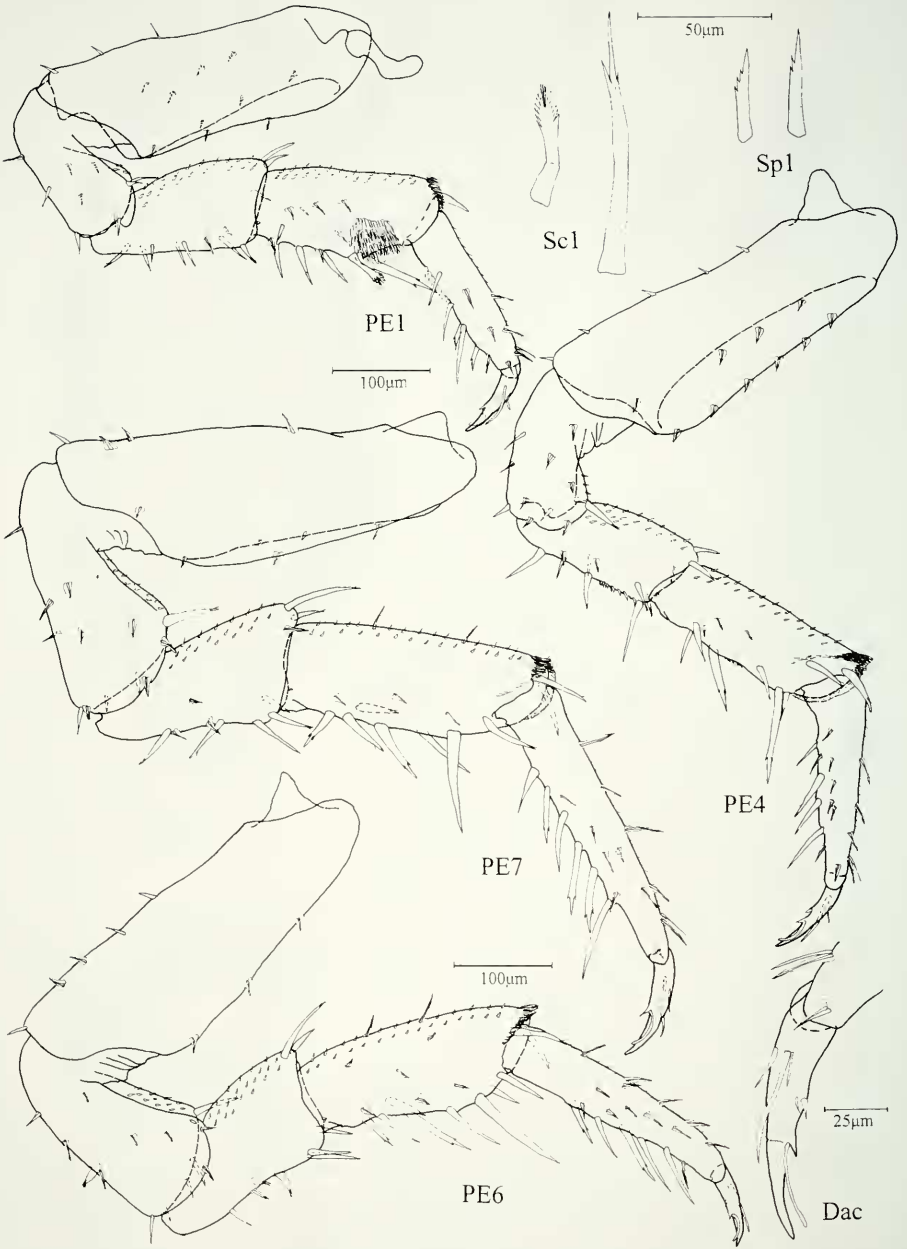


FIG. 41

Androdeloscia malleus sp. n. holotype ♂ 3mm. Dac dactylus 3 in rostral view; PE1-7 pereopods 1(rostral view), 4, 6, 7 (caudal view); Sc1 ornamental and longest sensory spine of carpus 1; Sp1 distal and medial sensory spine of propus 1.

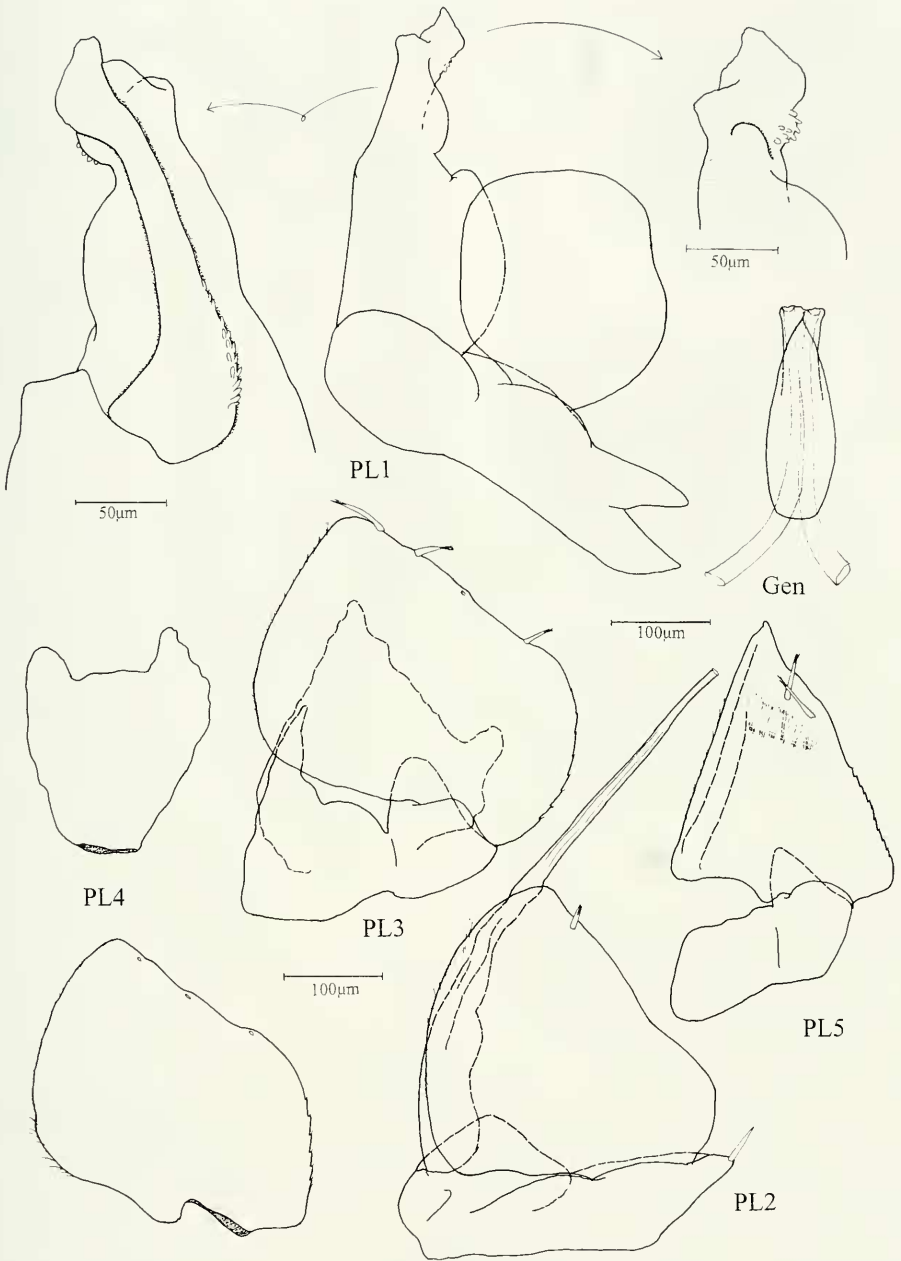


FIG. 42

Androdeloscia malleus sp. n. holotype ♂ 3mm. Gen genital papilla; PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and rostral view.

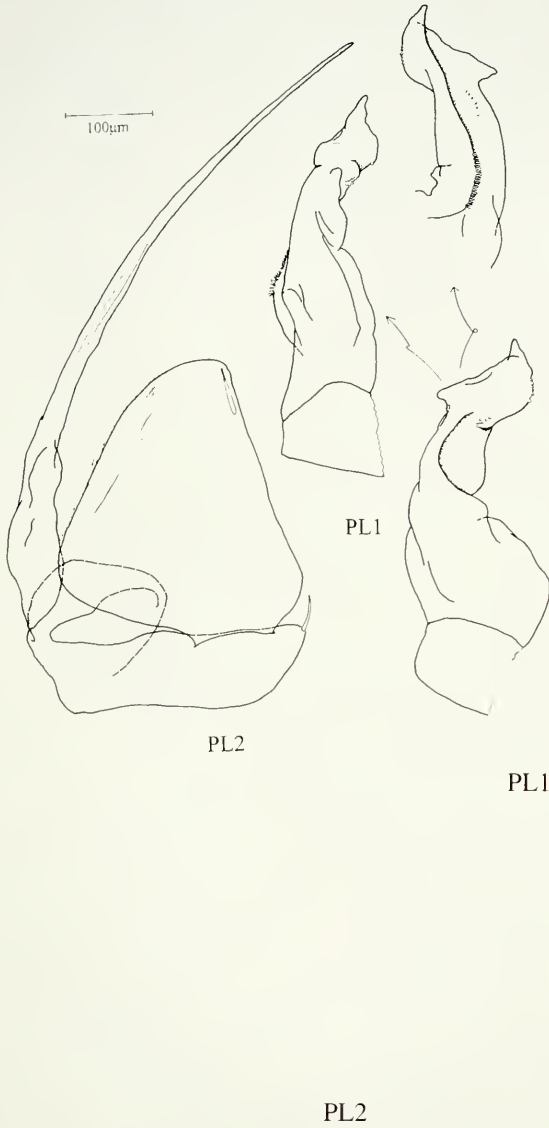


FIG. 43

Androdeloscia malleus sp. n. holotype ♂ 3mm. PL1-2 pleopods 1-2, rostral view, with details of endopodite 1 in caudal and mediorostral view.

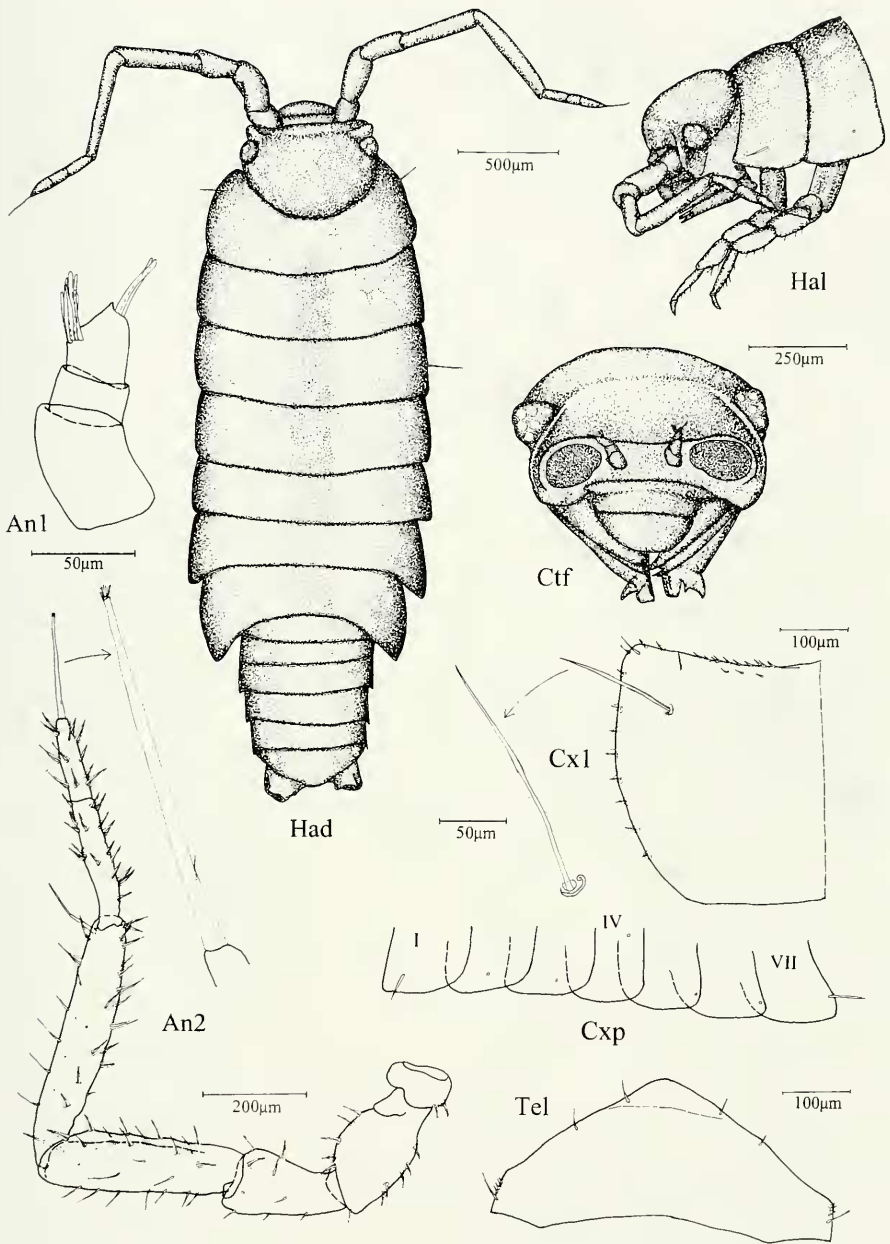


FIG. 44

Androdeloscia opercularis sp. n. holotype ♂ 3mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx1 coxal plate I; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

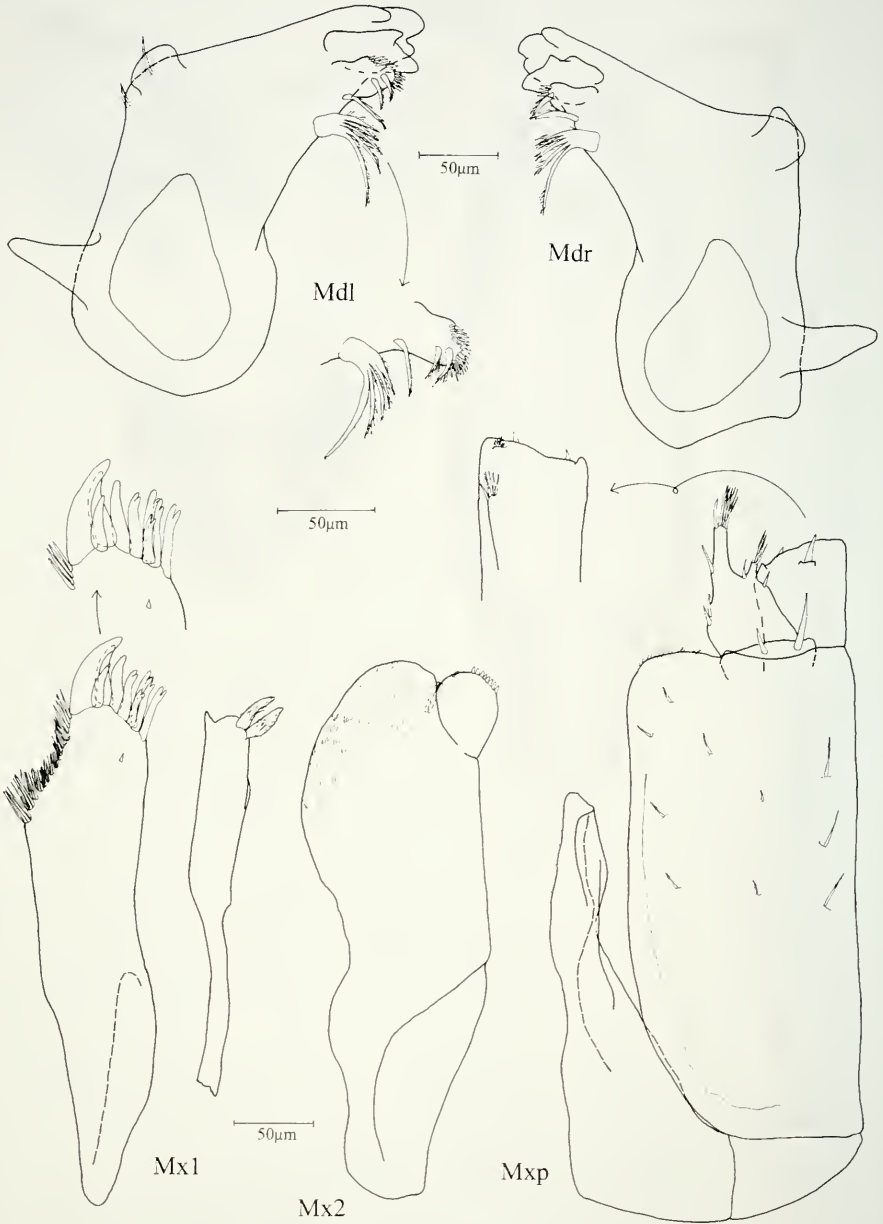


FIG. 45

Androdeloscia opercularis sp. n. holotype ♂ 3mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

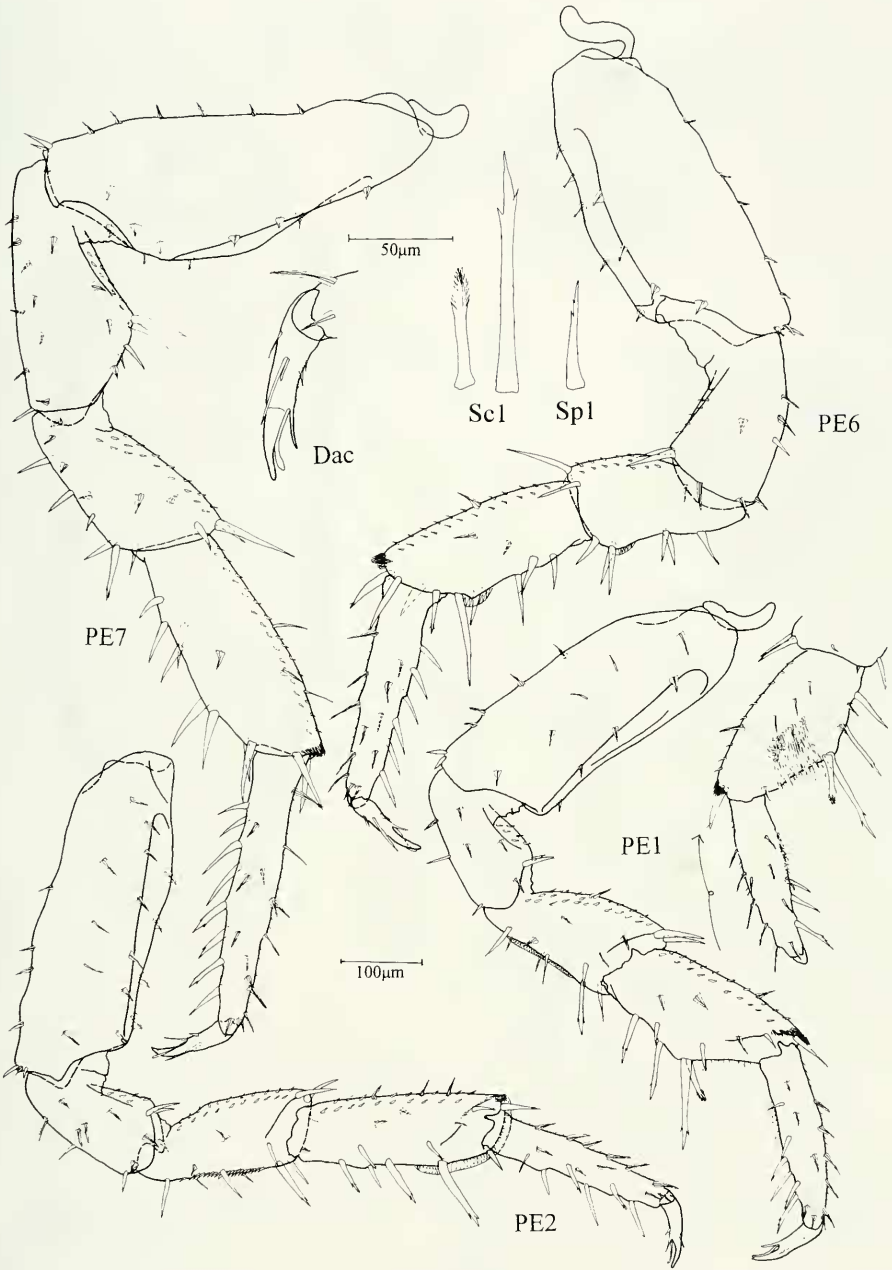


FIG. 46

Androdeloscia opercularis sp. n. holotype ♂ 3mm. Dac dactylus 3 in rostral view; PE1-7 pereopods 1, 2, 6, 7 (caudal view), detail of carpus 1 (rostral view); Sc1 ornamental and longest sensory spine of carpus 1; Spl distal and medial sensory spine of propus 1.

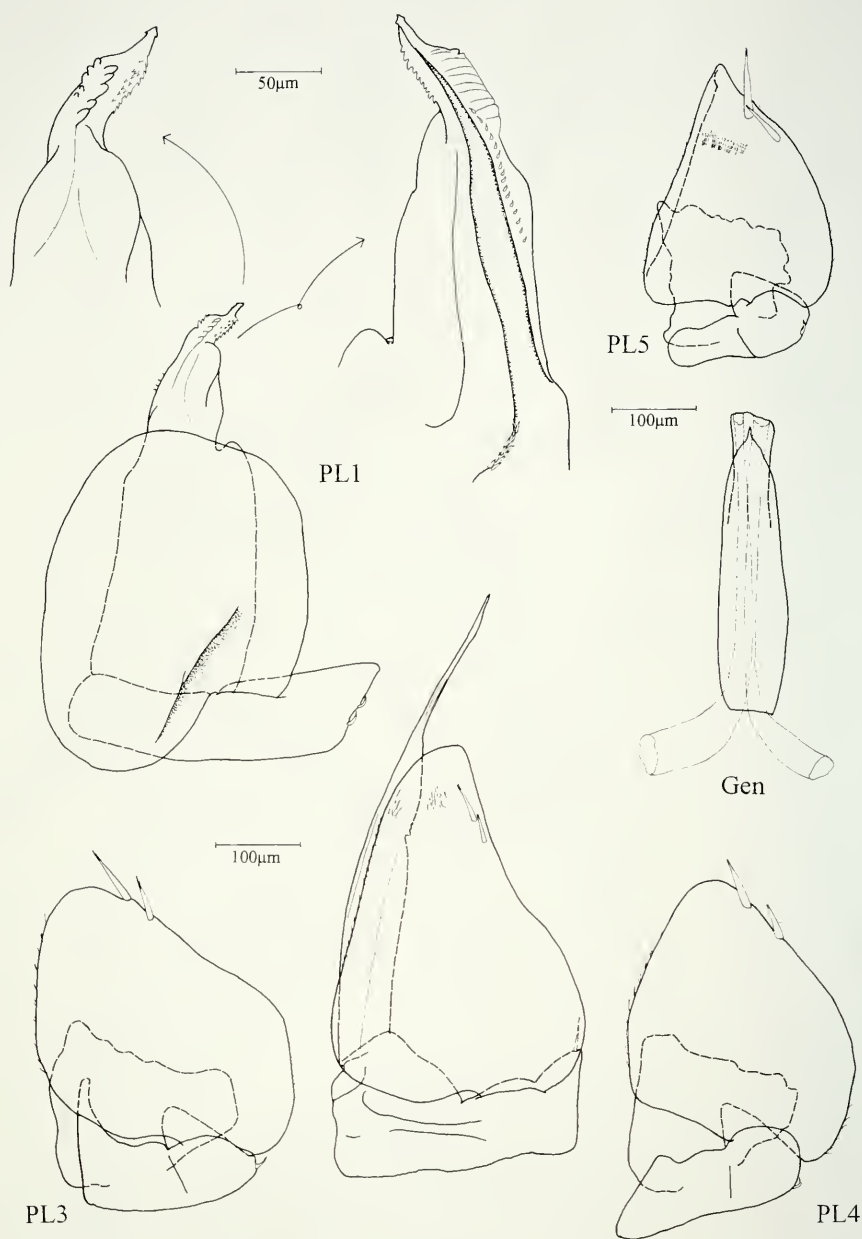


FIG. 47

Androdeloscia opercularis sp. n. holotype ♂ 3mm. Gen genital papilla; PL1-5 pleopods 1-5, rostral view, with details of endopodite 1 in caudal and rostral view.

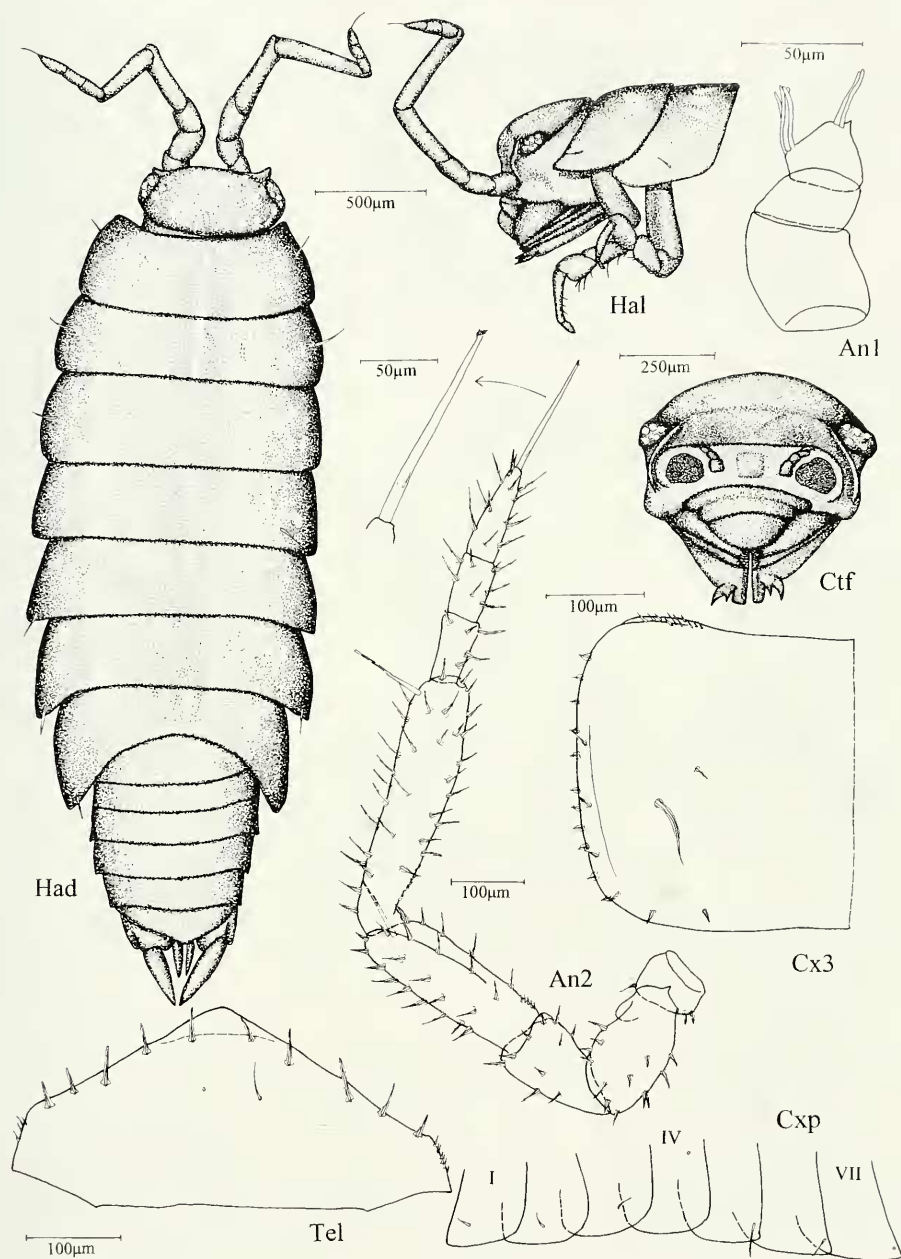


FIG. 48

Androdeloscia silvaica (Lemos de Castro & Souza, 1986) ♂ 3.5mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

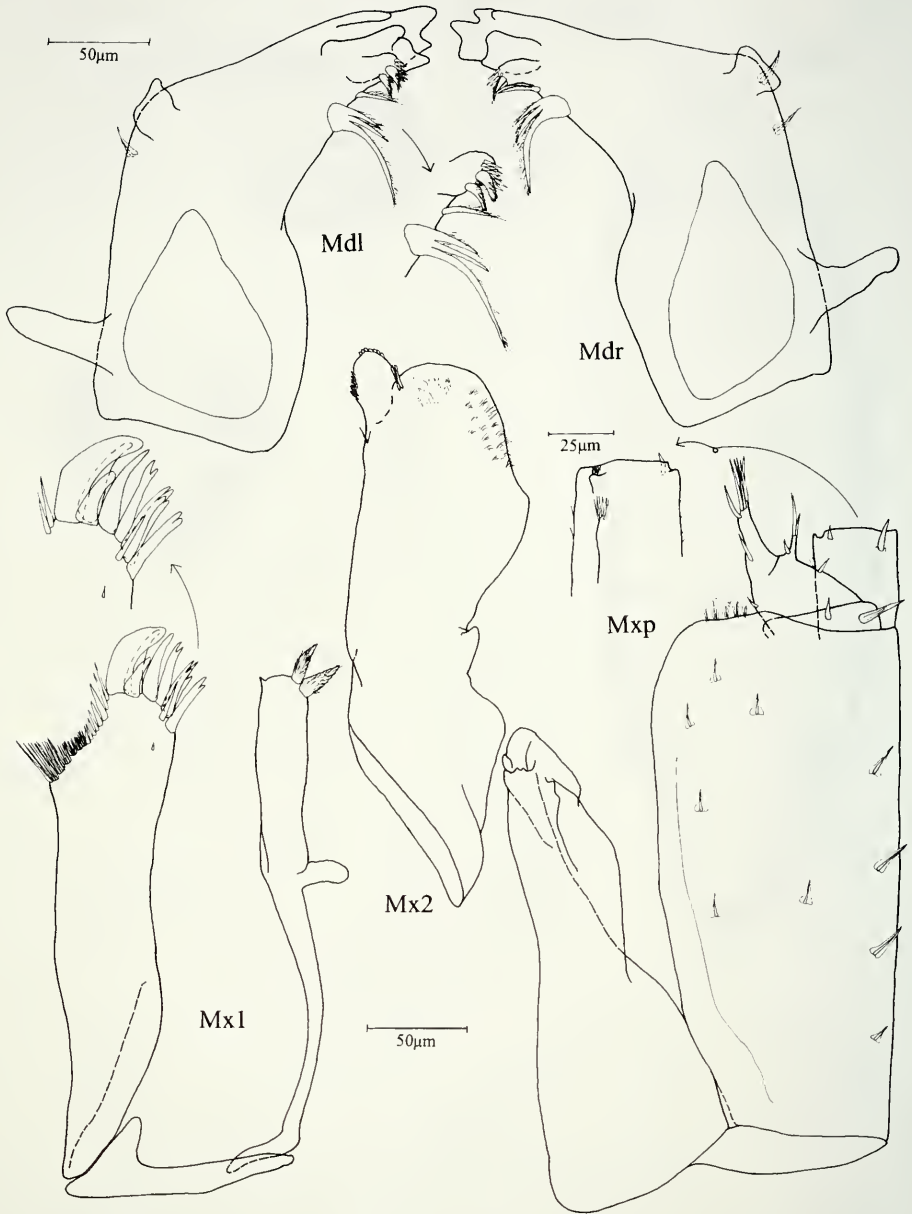


FIG. 49

Androdeloscia silvatica (Lemos de Castro & Souza, 1986) ♂ 3.5mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

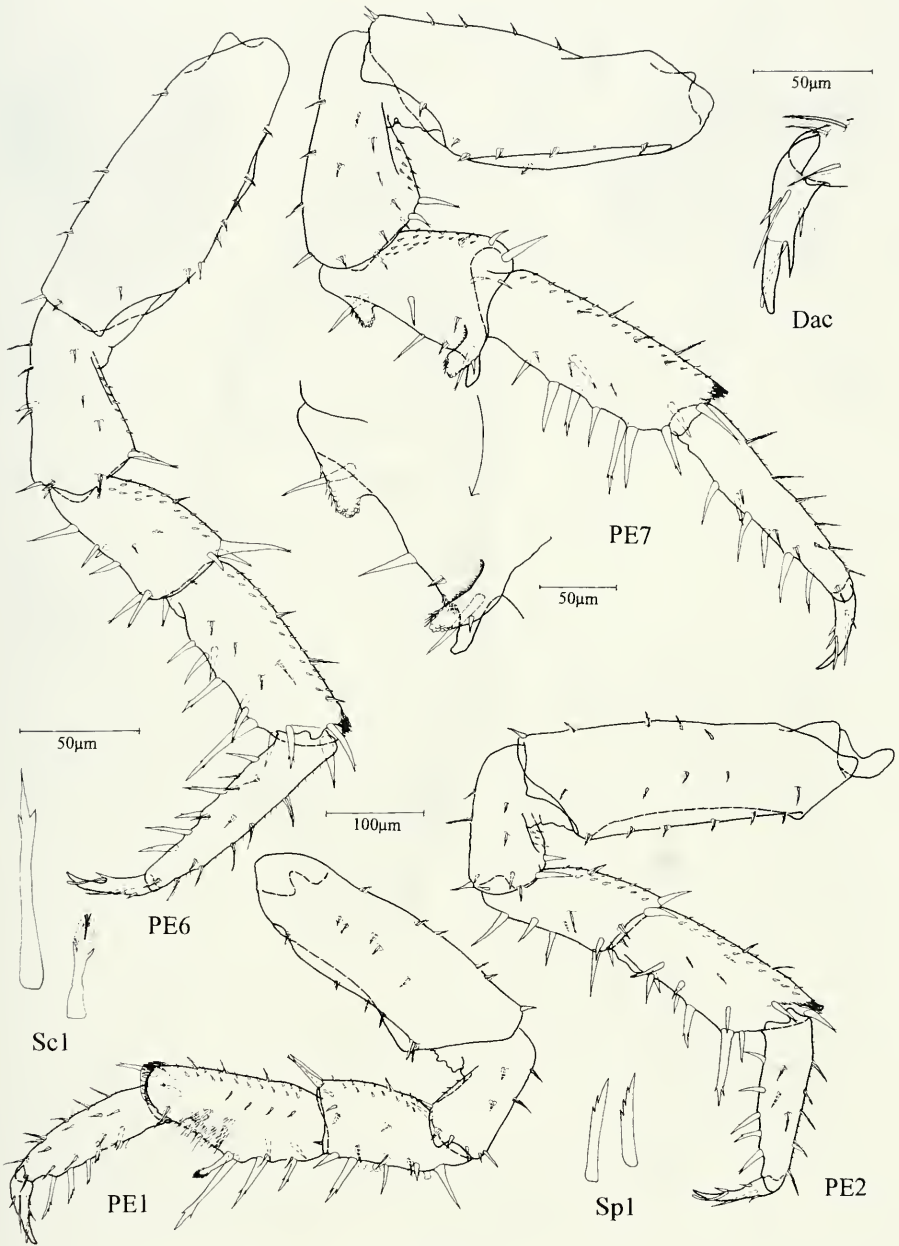


FIG. 50

Androdeloscia silvatica (Lemos de Castro & Souza, 1986) ♂ 3.5mm. Dac dactylus 1 in rostral view; PE1-7 pereopods 1 (rostral view), 2, 6, 7 (caudal view), with detail of merus 7; Sc1 ornamental and longest sensory spine of carpus 1; Sp1 distal and medial sensory spine of propus 1.

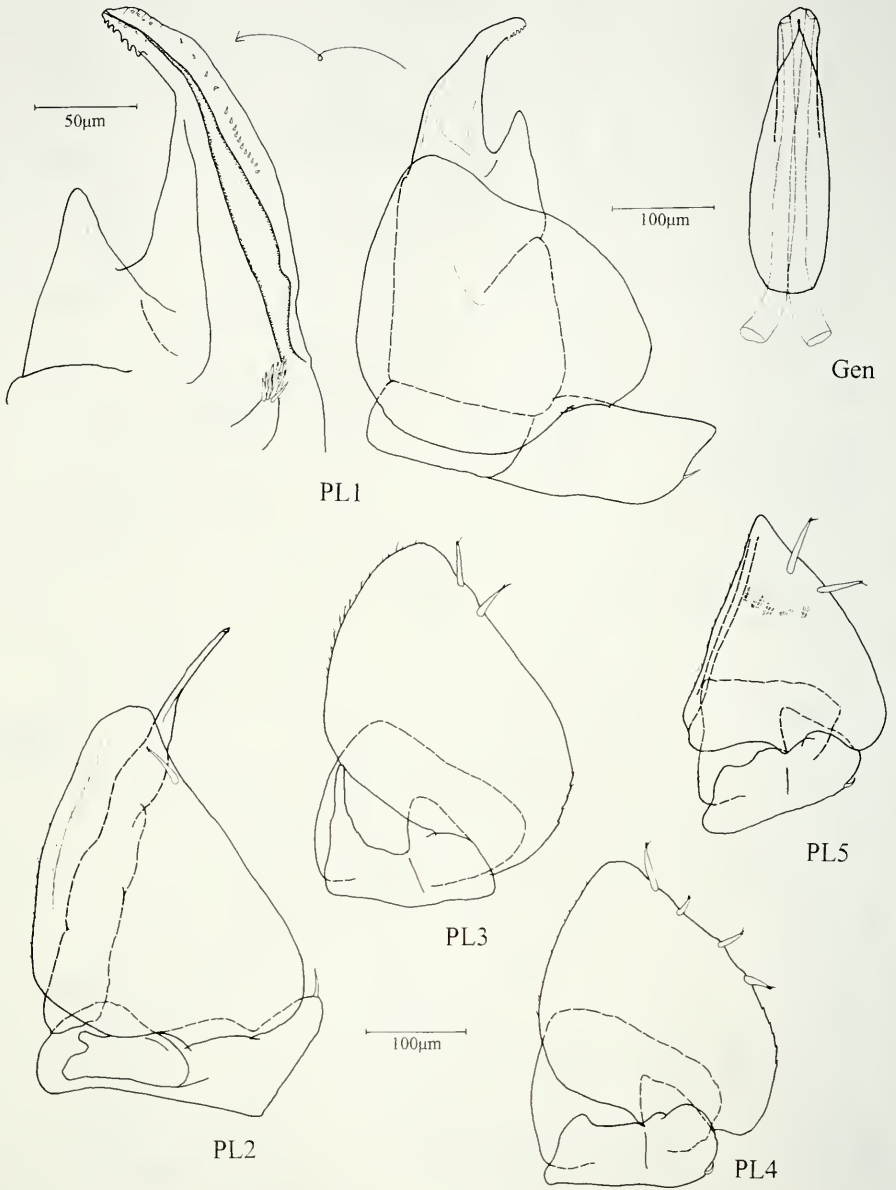


FIG. 51

Androdeloscia silvatica (Lemos de Castro & Souza, 1986) ♂ 3.5mm. Gen genital papilla; PL1-5 pleopods 1-5, rostral view, with detail of endopodite 1 in caudal view.

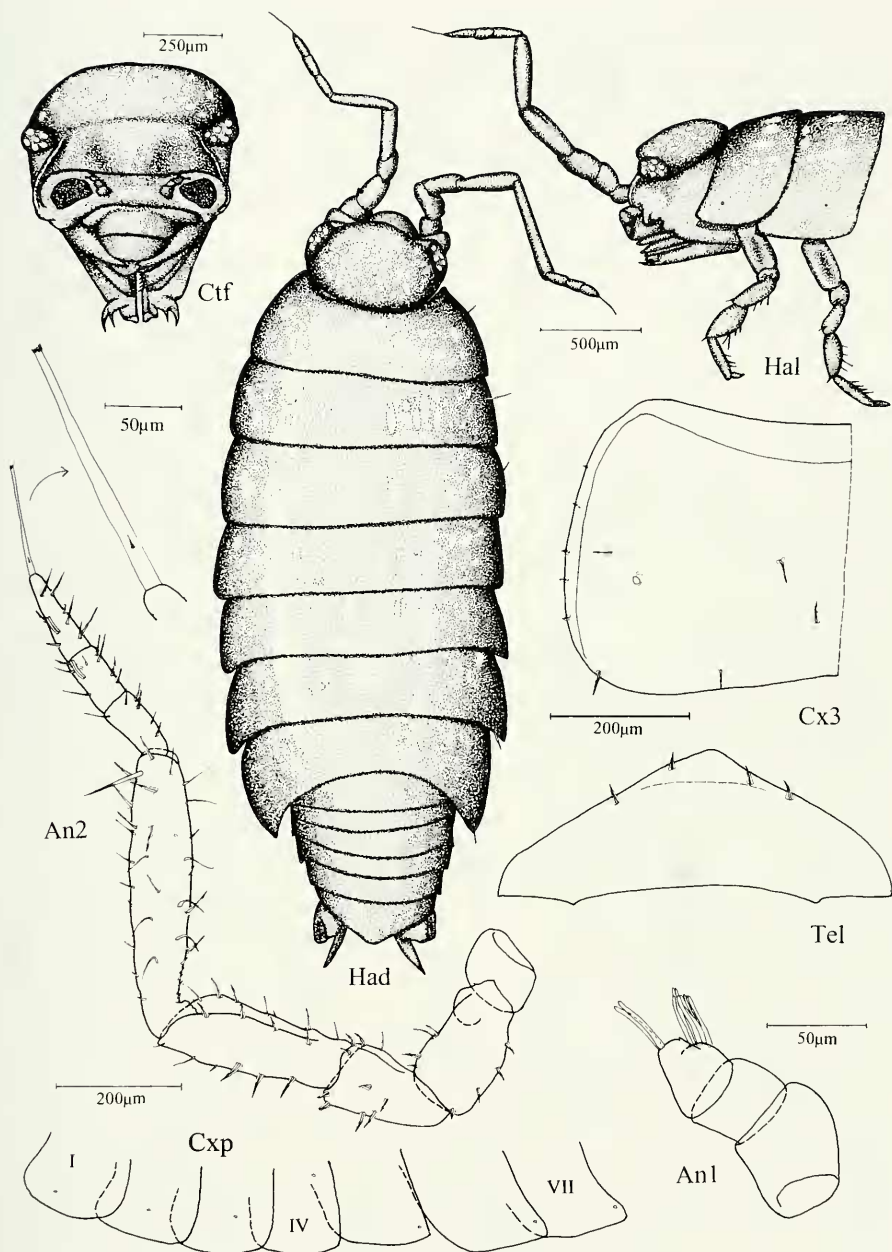


FIG. 52

Androdeloscia pseudosilvatica sp. n. holotype ♂ 3mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

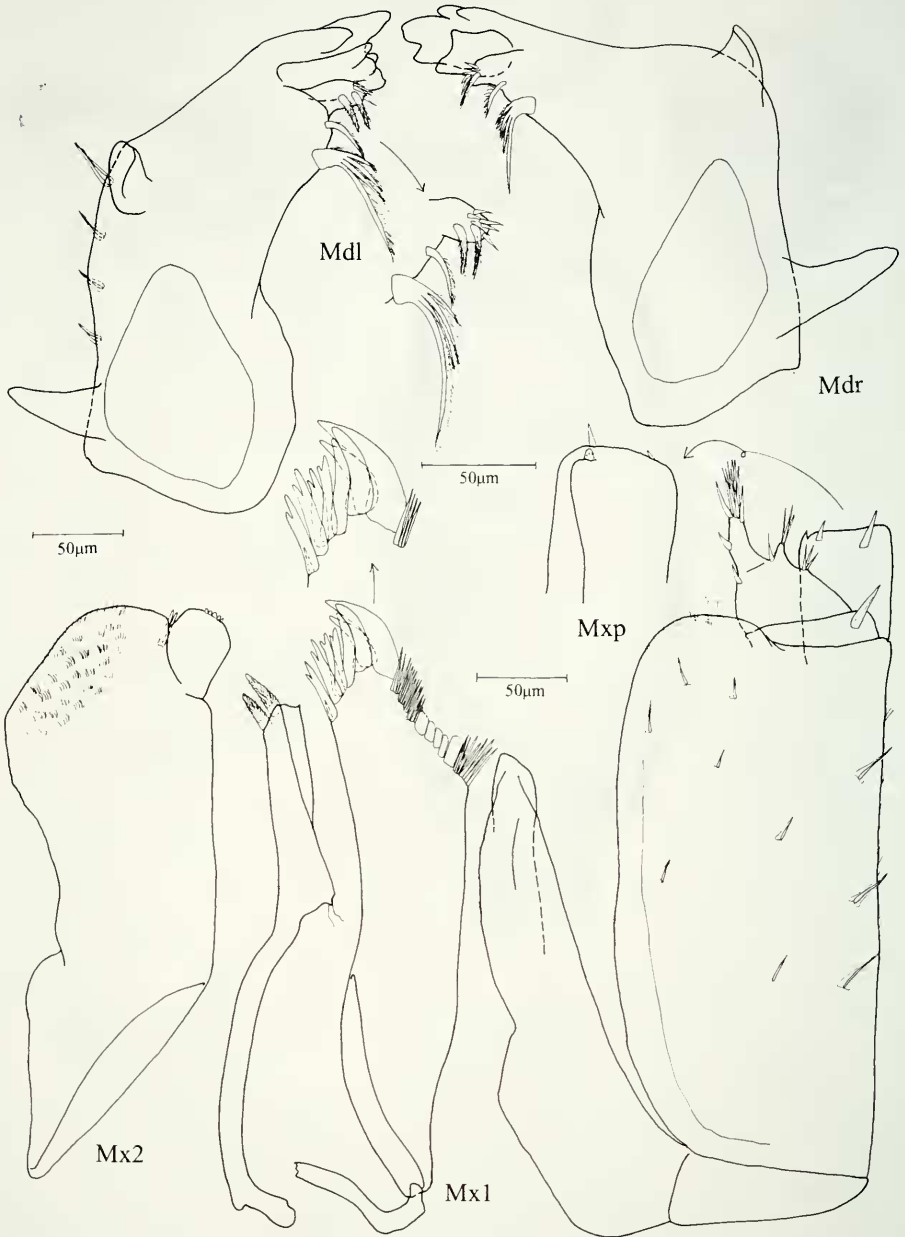


FIG. 53

Androdeloscia pseudosilvatica sp. n. holotype ♂ 3mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

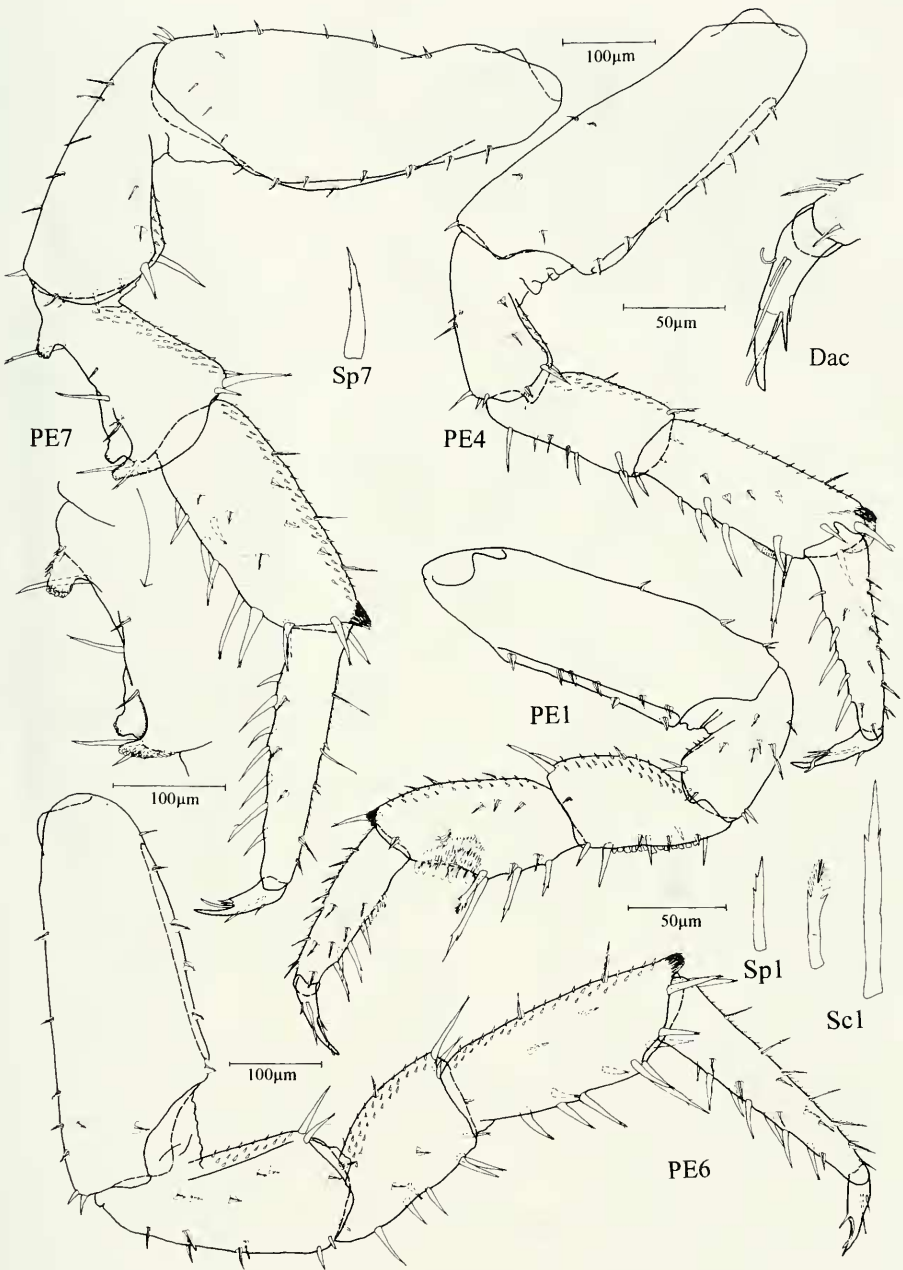


FIG. 54

Androdeloscia pseudosilvatica sp. n. holotype ♂ 3mm. Dac dactylus 3 in rostral view; PE1-7 pereopods 1 (rostral view), 4, 6, 7 (caudal view), with detail of merus 7; Sc1 ornamental and longest sensory spine of carpus 1; Sp1 distal and medial sensory spine of propus 1; Sp7 sensory spine of propus 7.

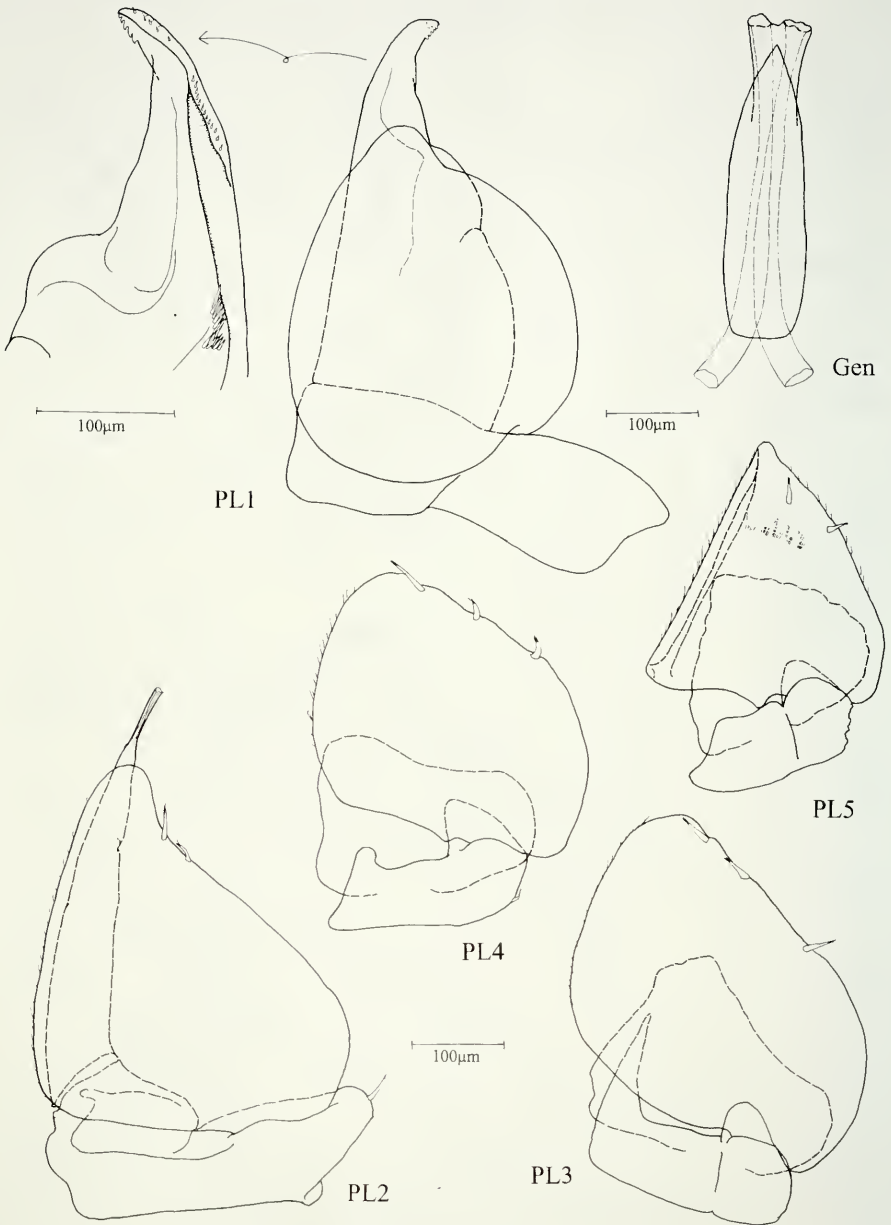


FIG. 55

Androdeloscia pseudosilvatica sp. n. holotype ♂ 3mm. Gen genital papilla; PL1-5 pleopods 1-5, rostral view, with detail of endopodite 1 in caudal view.

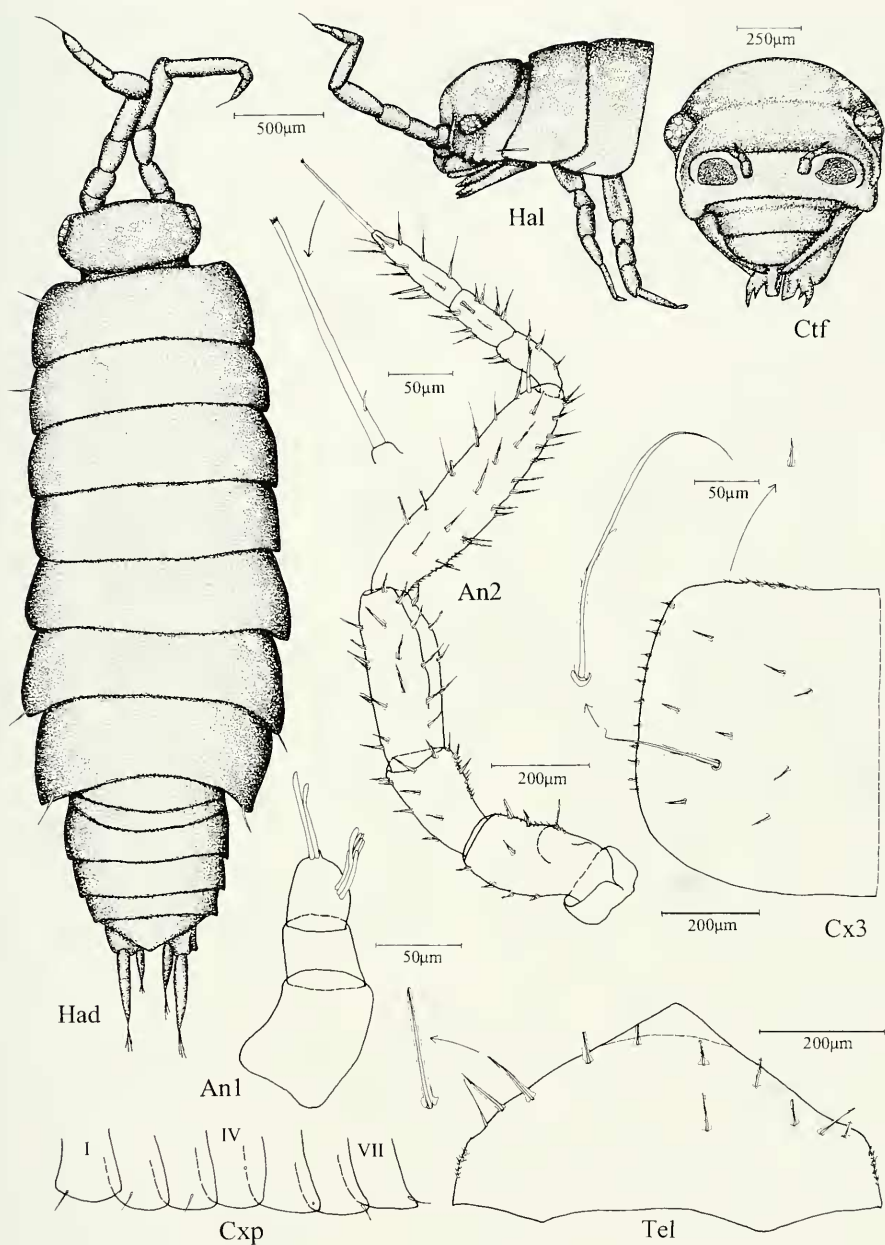


FIG. 56

Androdeloscia dalensi sp. n. holotype ♂ 3.5mm. An1 antennula; An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

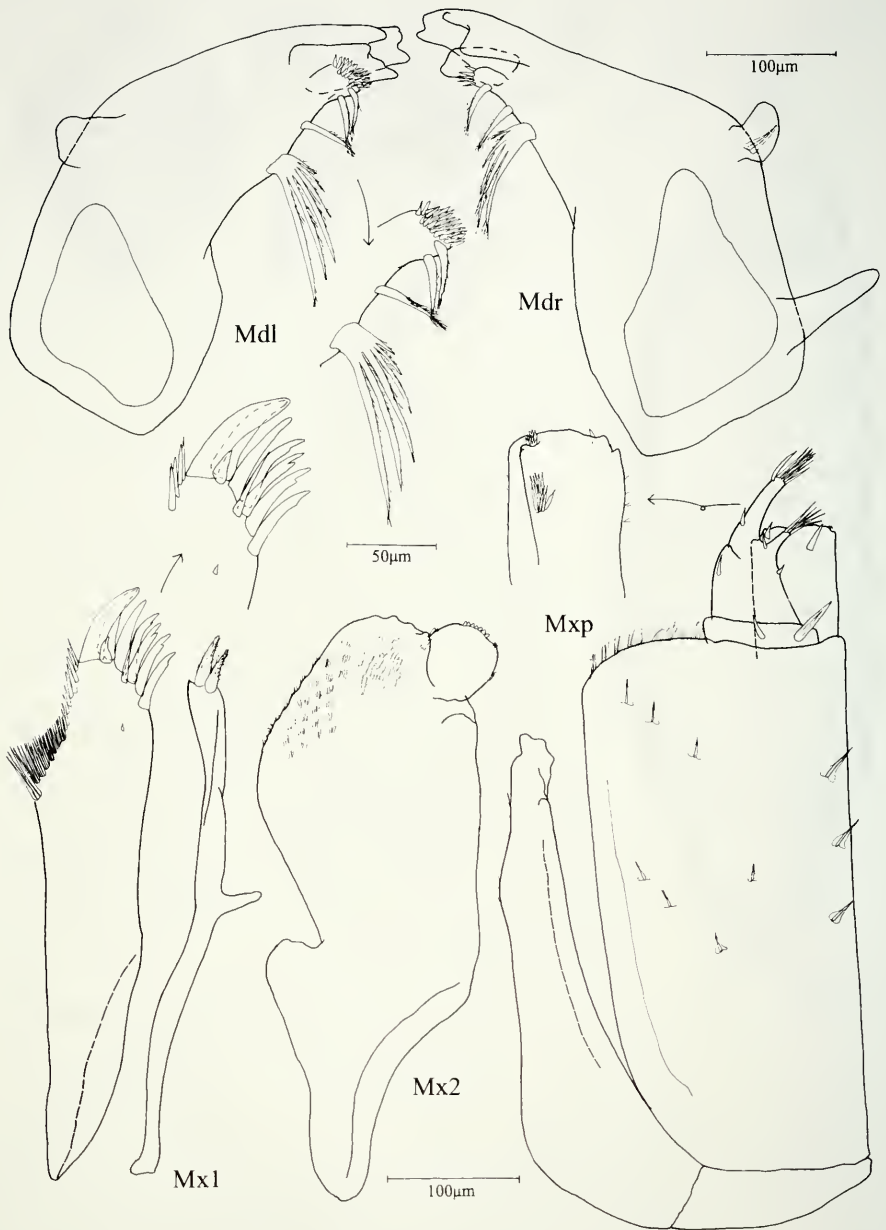


FIG. 57

Androdeloscia dalensi sp. n. holotype ♂ 3.5mm. Mdl/r left and right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

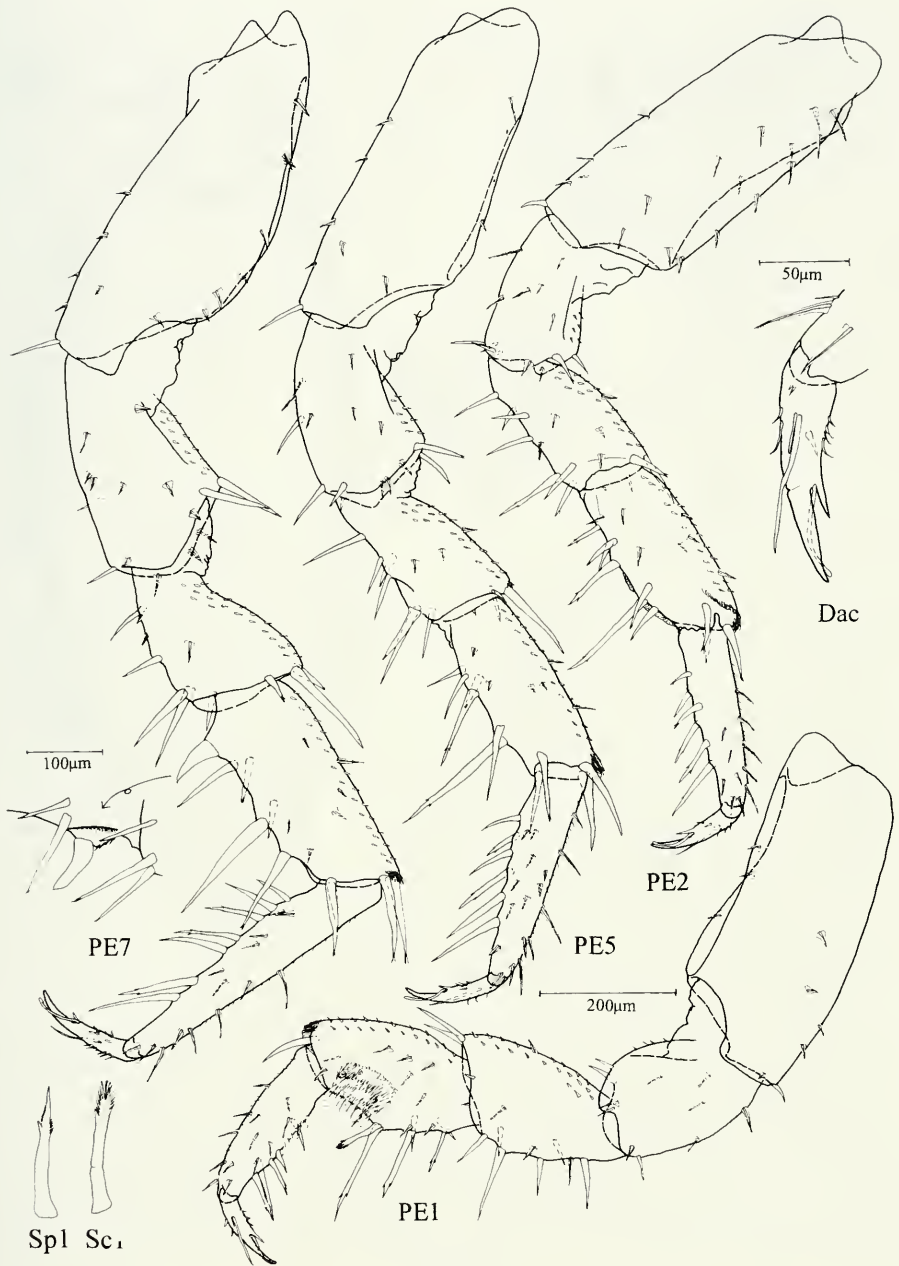


FIG. 58

Androdeloscia dalensi sp. n. holotype ♂ 3.5mm. Dac dactylus 1 in rostral view; PE1-7 pereopods 1 (rostral view), 2, 5, 7 (caudal view), with detail of carpus 7 in rostral view; Sc1 ornamental sensory spine of carpus 1; Spl distal sensory spine of propus 1.

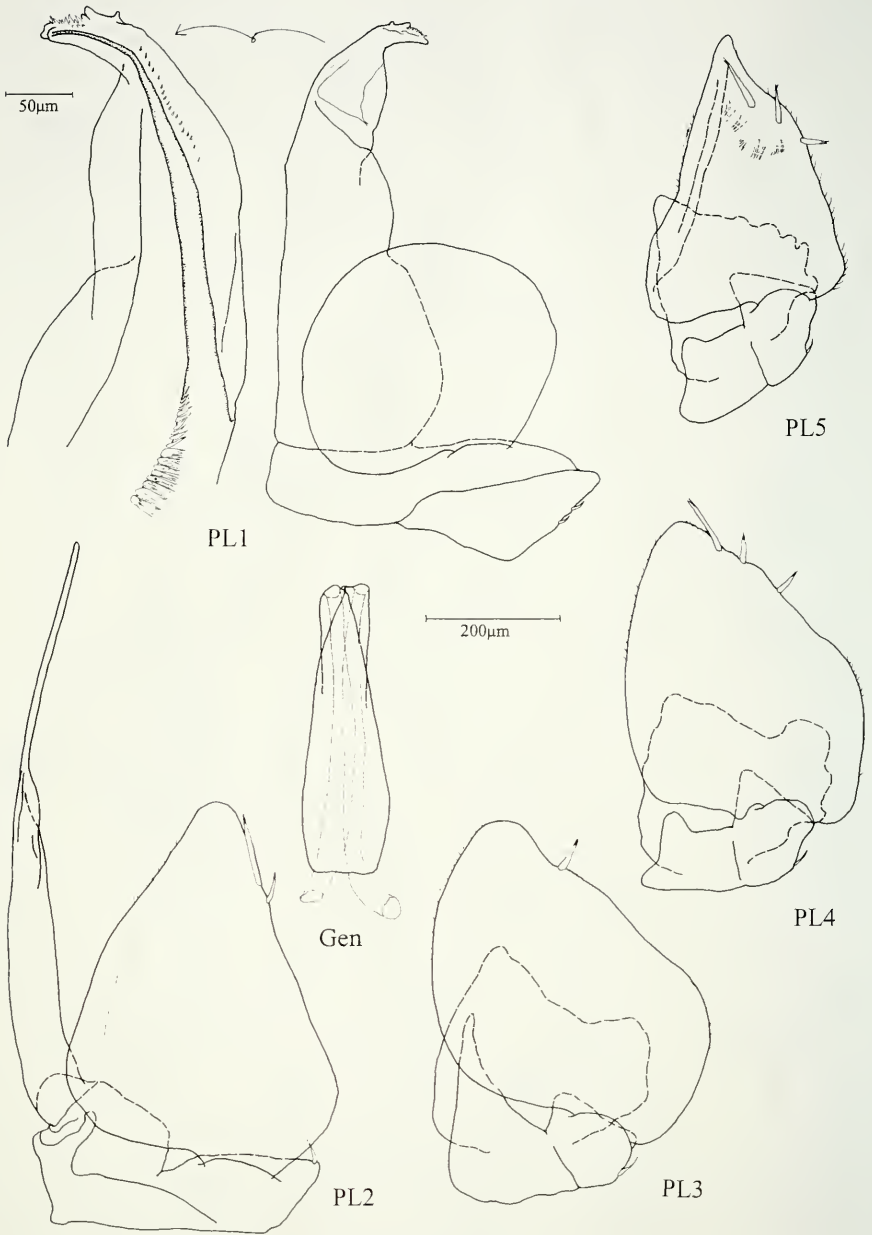


FIG. 59

Androdeloscia dalensi sp. n. holotype ♂ 3.5mm. Gen genital papilla; PL1-5 pleopods 1-5, rostral view, with detail of endopodite 1 in caudal view.

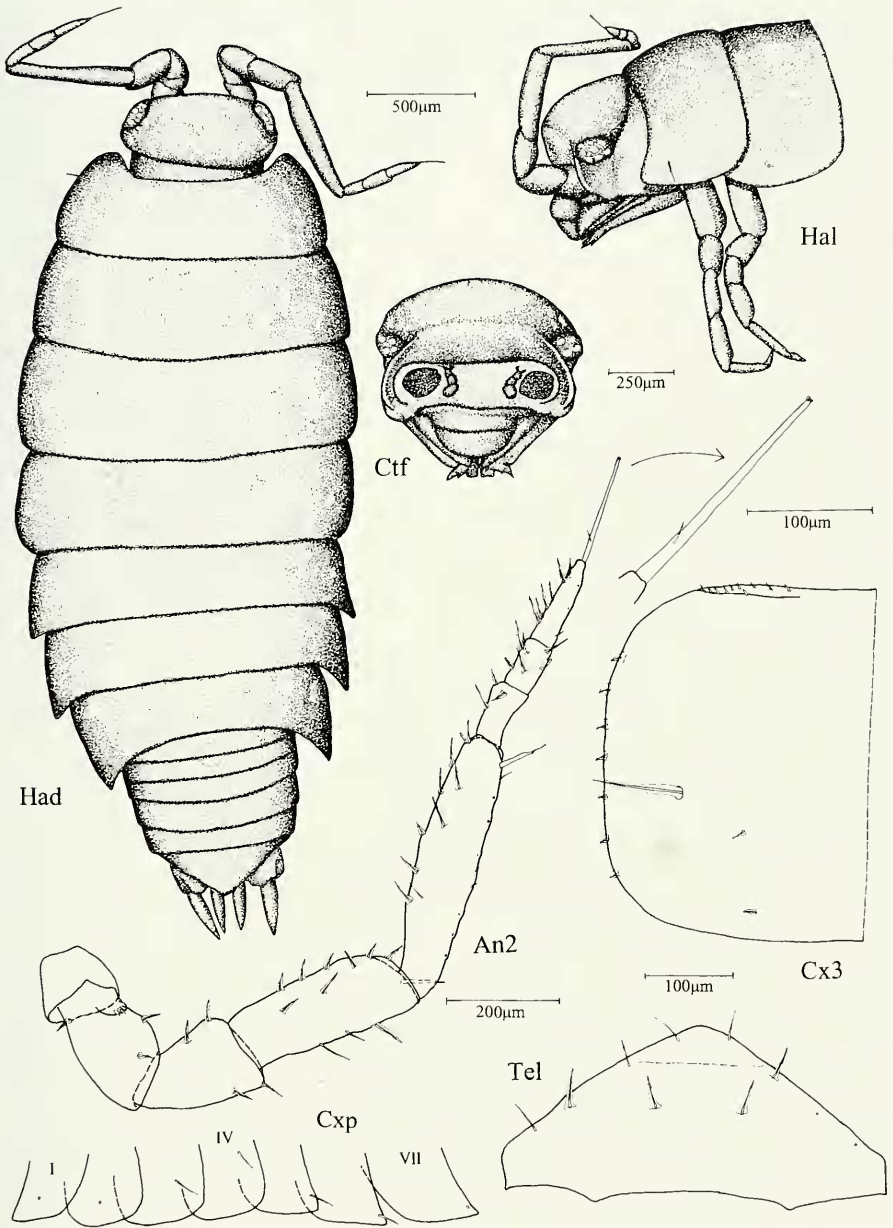


FIG. 60

Androdeloscia digitata sp. n. holotype ♂ 3mm. An2 antenna with detail of apical organ; Ctf cephalothorax in frontal view; Cxp coxal plates with position of noduli laterales; Cx3 coxal plate 3; Had habitus in dorsal view; Hal habitus in lateral view; Tel pleotelson.

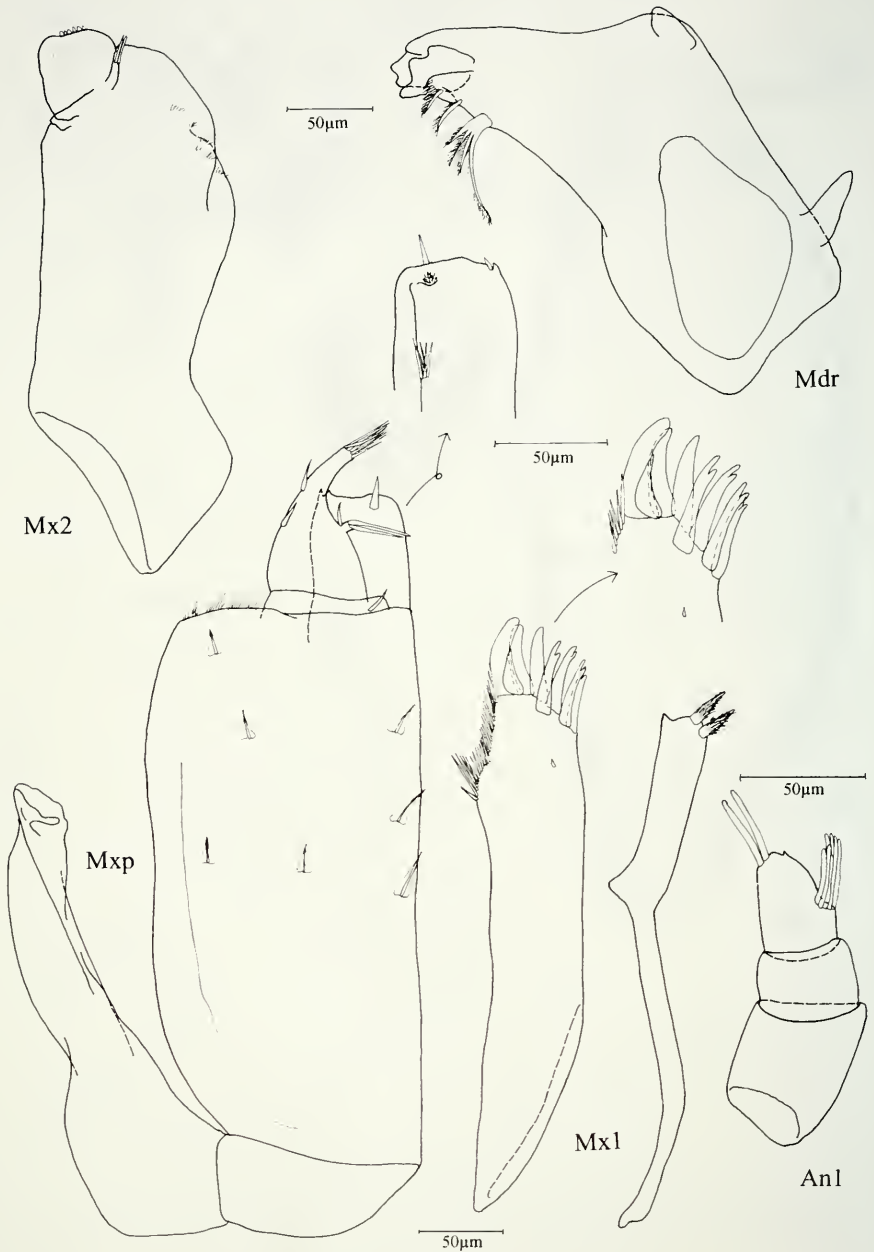


FIG. 61

Androdeloscia digitata sp. n. holotype ♂ 3mm. An1 antennula; Mdr right mandible; Mxp maxilliped with detail of endite in rostral view; Mx1 maxillula with detail of apex of lateral endite; Mx2 maxilla.

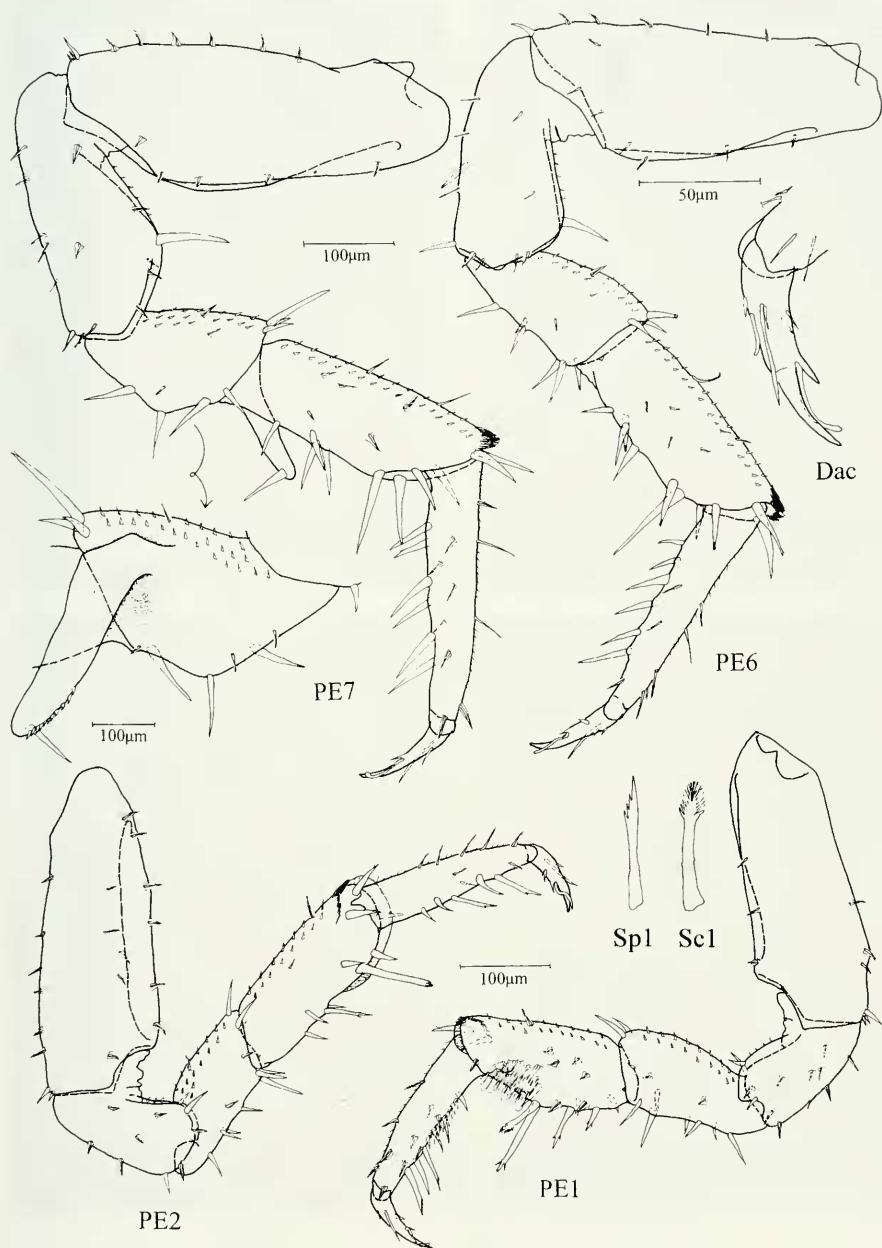


FIG. 62

Androdeloscia digitata sp. n. holotype ♂ 3mm. Dac dactylus 1 in rostral view; PE1-7 pereopods 1 (rostral view), 2, 6, 7 (caudal view), with detail of merus 7 in rostral view; Sc1 ornamental sensory spine of carpus 1; Sp1 distal sensory spine of propus 1.

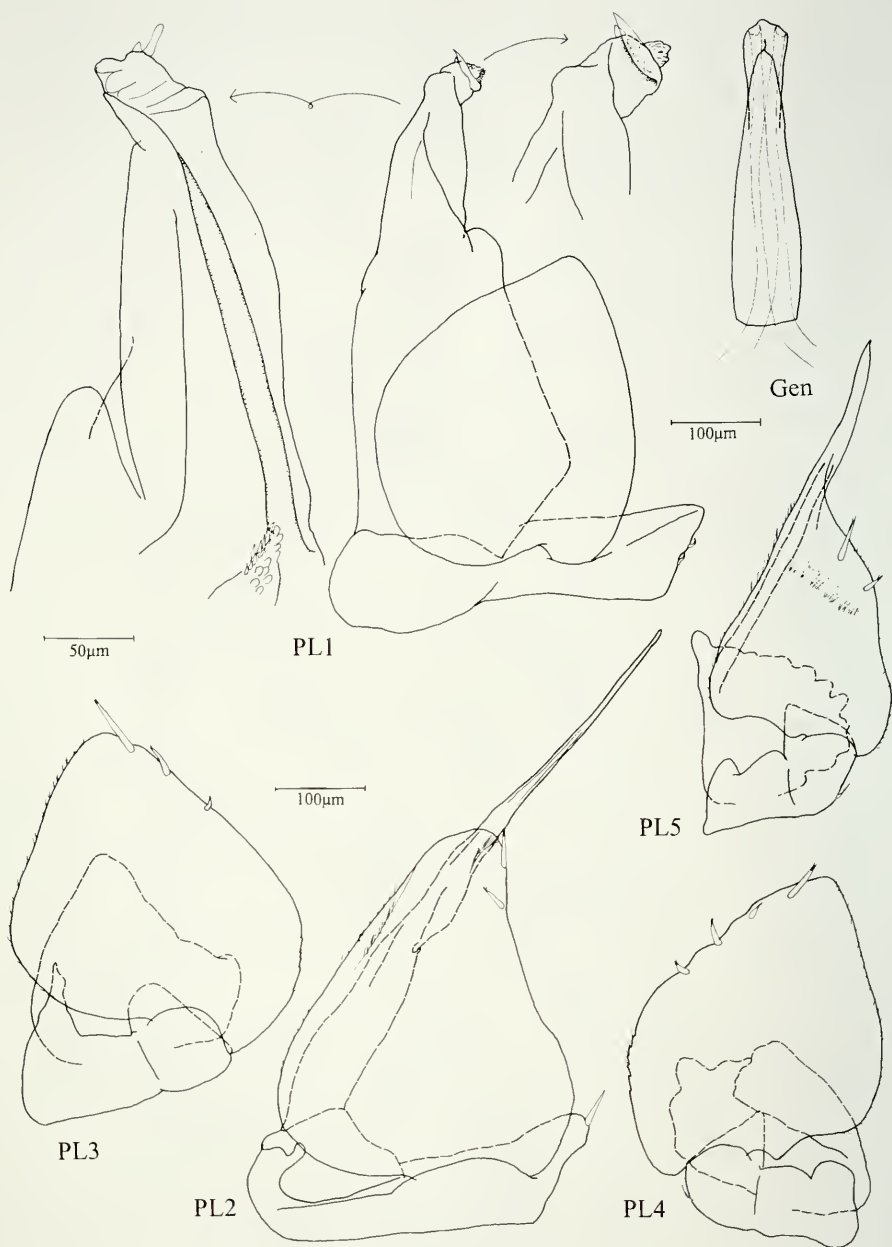


FIG. 63

Androdeloscia digitata sp. n. holotype ♂ 3mm. Gen genital papilla; PL1-5 pleopods 1-5, rostral view, with detail of endopodite 1 in caudal and rostral view.

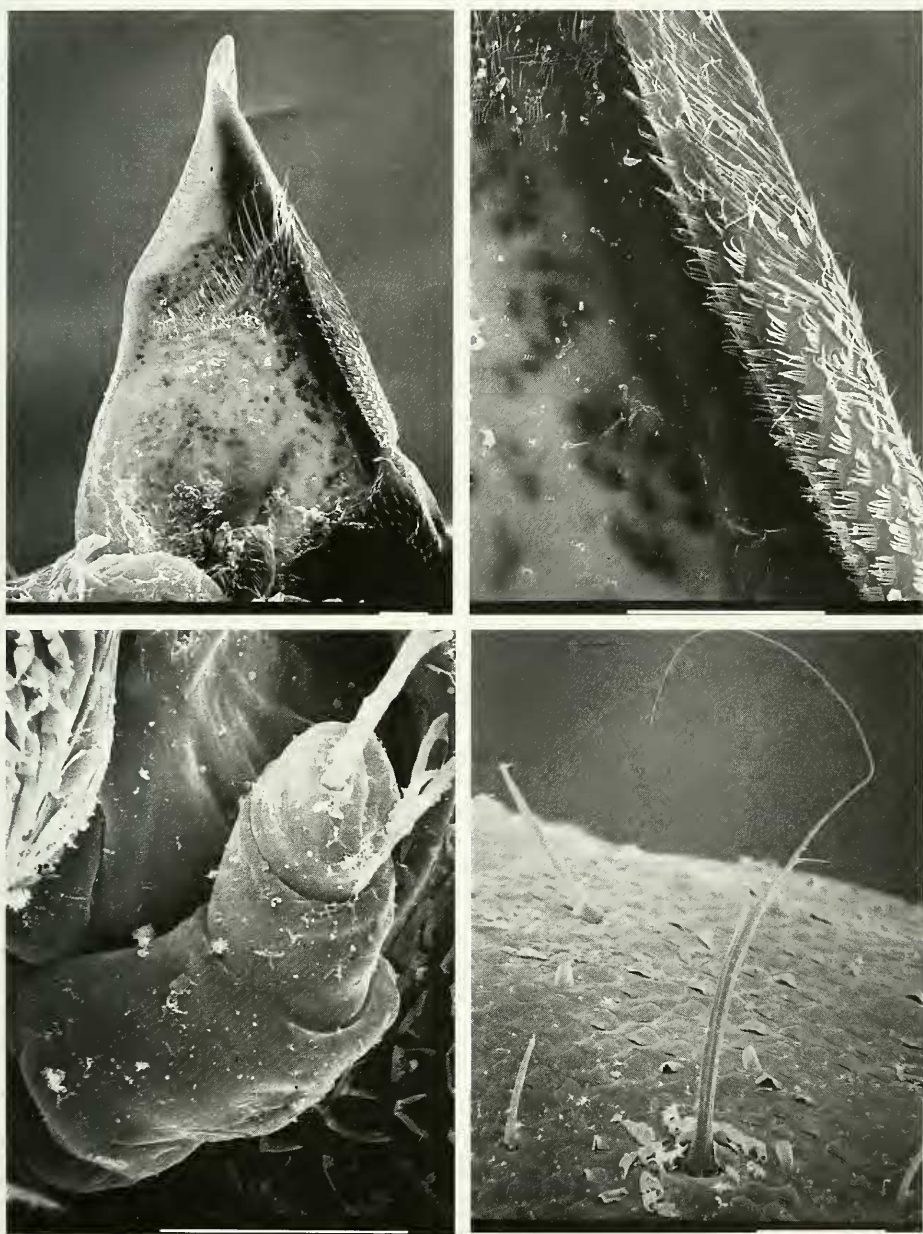


FIG. 64

Androdeloscia ferrarai sp. n. Above left: male pleopod 5 exopodite from caudal; above right: guide slot of pleopod 5 with pectinate scales. - *Androdeloscia merolobata* sp. n. Below left: antennula, below right: nodulus lateralis of coxal plate 3; scale bars: 50 μ m.

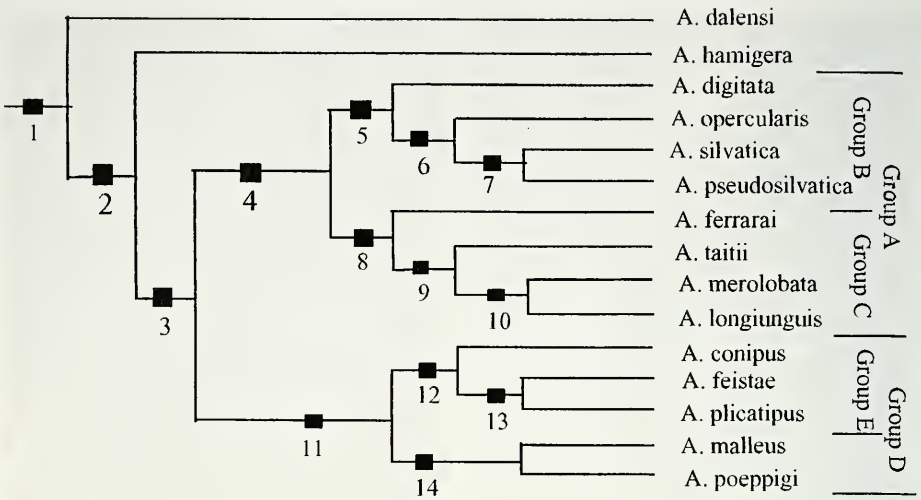


FIG. 65

Phylogenetic relationships within the genus *Androdeloscia* gen. n., explanation of apomorphic characters see text.

REFERENCES

- ERHARD, F. 1997. Das pleonale Skelet-Muskel-System von *Titanethes albus* und weiterer Taxa der Oniscidea mit Schlußfolgerungen zur Phylogenie der Landasseln. *Stuttgarter Beiträge zur Naturkunde, Serie B (Biologie)* 550: 1-70.
- LEISTIKOW, A. 1998. Redescriptions of terrestrial Isopoda from Chile and Peru (Crustacea: Isopoda: Oniscidea). *Spixiana* 21(3): 215-225.
- LEMONS DE CASTRO, A. 1984. Uma nova espécie de *Prosekia* de uma floresta inundável na Amazonia Central. *Amazoniana* 8: 441-445.
- LEMONS DE CASTRO, A. & SOUZA, L. A. 1986. Três espécies novas de isópodes terrestres do gênero *Prosekia* Vandel da Amazonia Brasileira. *Revista Brasileira de Zoologia* 46: 429-438.
- LIMA, I. M. B. 1997. Uma nova espécie de *Prosekia* Vandel, 1968 da Amazonia Brasileira (Crustacea: Isopoda: Philosciidae). *Amazoniana* 14: 101-104.
- SCHMALFUSS, H. 1980. A revision of the neotropical genus *Ischioscia* Verhoeff, with description of four new species. *Studies on Neotropical Fauna and Environment* 15: 125-139.
- SCHMALFUSS, H. 1990. Die Landisopoden Griechenlands. 11. Beitrag: Gattung *Chaetophiloscia*. *Revue suisse de Zoologie* 97: 169-193.
- SIMPSON, B. B. & HAFFER, J. 1978. Speciation patterns in the Amazonian forest biota. *Annual Review of Ecology and Systematics* 9: 497-518.
- STURM, H. 1994. Diskontinuierliche Gene und Evolution. *Zeitschrift für zoologische Systematik und Evolutionsforschung* 32: 241-263.
- VANDEL, A. 1952. Étude des isopodes terrestres récoltés au Vénézuéla par le Dr. G. Marcuzzi. *Memorias del Museo civico di Storia Naturale in Verona* 3: 59-203.
- VANDEL, A. 1968. Isopodes terrestres. In: LELEUP N. and J. (eds). *Mission zoologique belge aux Iles de Galapagos et Ecuador* 84: 35-168.
- VANDEL, A. 1972. Les isopodes terrestres de la Colombie. *Studies on Neotropical Fauna and Environment* 7: 147-172.
- VERHOEFF, K. W. 1908. Neue Isopoden-Gattungen. *Zoologischer Anzeiger* 33: 520-525.